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STORAGE

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ASSISTED BY

T. F. KERR, M. D., and E. A. CHAPOTON, M. D.

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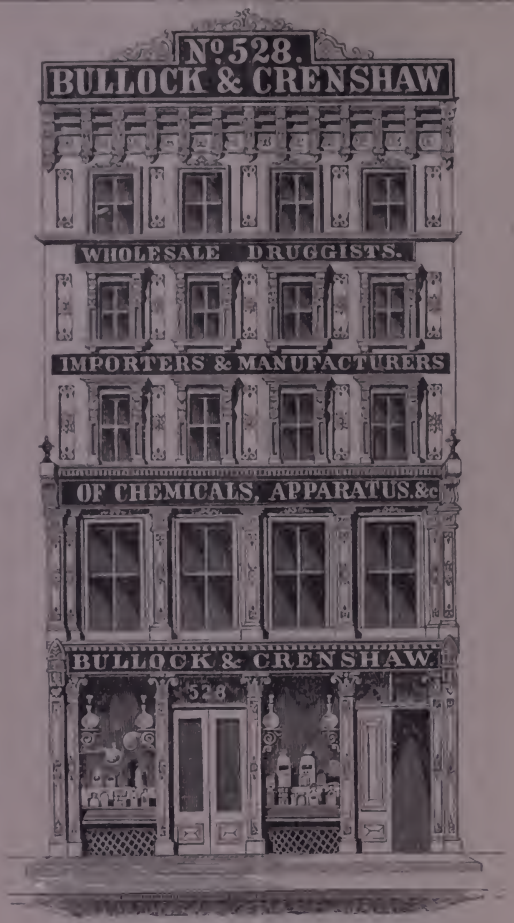

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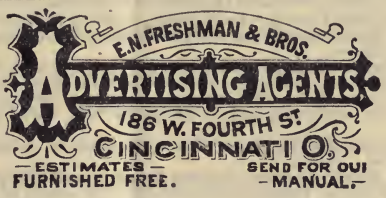

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Detroit Medical Journal.

NEW SERIES. VOL. I. FEBRUARY, 1877. No. 2.

Original Communications.

Some Anomalous Cases of Typhoid Fever, Illustrating the Thermometrical Variations in the Onset and Course of the Disease.

BY PROF. GEO. E. FROTHINGHAM, M.D., ANN ARBOR, MICH.

Although typhoid fever has been so thoroughly studied, there are still connected with it many questions of interest not yet settled, and which can only be determined by a more extended and careful observation of cases. The question of contagion in this disease is not yet decided and good authorities still deny its contagious character, although the contributions of facts and cases have been so numerous, authentic and conclusive that it would seem that no text-book which denies this fact without fully presenting the evidence in its favor could be considered a safe guide for the student in studying this disease.

The thermometry also seems to be among the questions that have been too hastily settled by some authors, and the diagnostic rules they have deduced are altogether too arbitrary, and

calculated, as I believe, to frequently mislead those not familiar with its various phases.

Thus Dr. Aitken (Science and Practice of Medicine, Vol. 1, p. 356, 2d Am. Ed.) makes the following statement in regard to the thermometry of this affection:

"When the temperature on the first or second day reaches to 104°, or where in a child or in an adult the evening temperature between the fourth and sixth day does not reach to 103°, where in the second half of the first week there is considerable abatement of the evening temperature, we have, in such cases, certainly *not to do with typhoid fever.*"

This statement is derived from the published statements of Wunderlich, but is somewhat more positive than the conclusions of that author based upon the seven hundred cases observed by him.

That the above rule applies in the majority of cases is very certain, but that the exceptions are very numerous I fully believe.

As the above teaching seems to be universally accepted I am led to report the following facts observed by me during the past few years.

The first case I shall quote is that of B. B., a patient aged 20, seen by me first on March 13, 1875. This patient had felt perfectly well until the day preceding my visit. He had no symptoms of disease whatever. On the afternoon of that day (Mar. 12) he visited a bath house and took a warm bath lasting about half an hour. At the close of this warm bath he attempted to take a cold shower bath, but it occasioned such a spasm of the respiratory muscles that he was obliged to immediately desist. He felt no further discomfort except a slight headache until seven hours after the bath, when he was taken with a chill lasting three-fourths of an hour, and followed by a fever.

I saw him at 6 p. m. on the 13th, about twenty-four hours after the chill. The following is the record of pulse and temperature, as accurately kept through the course of the disease:

March	13,	6 p. m.,	pulse, 112 ;	temperature,	104¼°.
"	14,	10 a. m.,	" 110	"	102¾°.
"	15,	6 p. m.,	" 116	"	104½°.
"	16,	5 p. m.,	" 108	"	104°.
"	17,	11 a. m.,	" 100	"	103°.
"	17,	5 p. m.,	" 111	"	104⅛°.
"	18,	10 a. m.,	" 100	"	103°.
"	18,	5 p. m.,	" 108	"	104°.
"	19,	5 p. m.,	" 110	"	104°.
"	20,	3 p. m.,	" 108	"	104°.
"	21,	11 a. m.,	" 94	"	102°.
"	22,	6 p. m.,	" 86	"	102¼°.
"	23,	12 m.,	" 84	"	101°.
"	24,	7 p. m.,	"	"	100°.
"	25,	5 p. m.,	" 88	"	101°.
"	26,	8 p. m.,	" 80	"	101°.
"	27,	6 p. m.,	" 78	"	101°.
"	28,	7 p. m.,	" 74	"	100°.
"	29,	7 p. m.,	" 70	"	100°.
"	31,	6 p. m.,	" 72	"	100°.
April	2,	12 m.,	" 72	"	99 $\frac{7}{10}$°.
"	4,	5 p. m.,	" 72	"	99½°.
"	6,	5 p m.,	" 72	"	99°.
"	8,	5 p. m.,	" 72	"	98½.

There was not the least evidence of any complication in this case and the symptoms were such as to mark it plainly as one of typhoid fever. The eruption appeared on the tenth day and was sufficiently characteristic. There were other symptoms also, sufficient to confirm the diagnosis.

The point of interest in this case, that bears upon the matter in discussion, is the sudden onset of the disease with a temperature of 104¼°.

The consideration of the action of the bath in exciting the

attack would be of interest, but space allows only this brief reference to it.

Case 2.—R. B. C., a young man, aged 18, was taken ill Nov. 1, 1874, with no premonitory symptoms whatever. My first visit was made in the evening of that day, and the temperature was 104½°. On the next morning, the temperature being down to 100°, full anti-periodic doses of quinine were ordered and taken during the day. In the evening the temperature rose again to 105°. The subsequent course of the case was such as to characterize it fully as one of typhoid fever. The eruption appeared on the 10th day and was abundant, appearing in successive crops. There was also diarrhœa with the characteristic color to the discharges. The case in the latter part of its course was treated by my colleague, Dr. Maclean, who also regarded it as an undoubted and uncomplicated case of typhoid fever. The patient convalesced on 22d day.

Case 3d.—M. M. a young lady of 17, was taken ill Aug. 11th, 1874. The history given me was that she had felt well until a few days previous to her attack. For these few days she had felt languid but not especially ill. On the day specified she felt chilly and the chill was followed by fever. I saw her on the 12th at 8 p. m. The temperature was then 104°. There was no evidence of local inflammation to account for the fever. The next day at 11 A. M., the temperature was 102½°, rising to 103½° by 7 P. M.

The subsequent record showed,—

August	14,	9	a. m.,	temperature,	101½°.
"	14,	8	p. m.,	"	102½.
"	15,	7½	" "	"	103.
"	16,	8	" "	"	103.
"	17,	5½	" "	"	104¾.
"	18,	8	" "	"	103.
"	19,	9	" "	"	104.

August	20,	5	p. m.,	temperature,	104¾.
"	21,	7	" "	"	104¾.
"	22,	8	" "	"	105.
"	23,	8	" "	"	104½.
"	24,	8	" "	"	105.
"	25,	8	" "	"	104.
"	26,	8	" "	"	102.
"	27, patient died at 6 a. m.				

No post-mortem examination could be obtained, but the symptoms were such as to characterize this case as uncomplicated typhoid fever, and the only point of interest is the high temperature at the commencement.

In my own practice two other cases of this kind have occurred, one having a temperature of 105½° and the other 104½° on the second day of the fever.

A case of typhoid fever recently occurred in the practice of my colleague, Dr. Maclean, that commenced with a high temperature, and otherwise ran a remarkable course. I subjoin a few brief notes which he has kindly furnished me:

J. D., aged 23, was seized with a chill on the evening of June 20, 1875. The body temperature, taken at the time, was 105°. Next morning the temperature was down to 99°, and the case was regarded as one of ague. Full doses of quinine were rapidly given and the effect obtained. Nevertheless, the evening temperature rose to 105½°. The next evening the temperature was up to 106°, and on the fourth it rose to 107°, remaining at that and 107½ until the patient's death, which occurred on the seventh day from the attack. There was diarrhœa, delirium, and great restlessness through nearly the whole attack. A post-mortem examination was thoroughly and extensively made, every important organ was examined and no pathological change could be found except a disease of Peyer's glands. These were found thickened and vascular, and pre-

senting the condition characteristic of typhoid fever. At the post-mortem examination several physicians were present, and all concurred in pronouncing the case one of typhoid fever.

In this case not only did the disease commence with a temperature above 104, but after the second day the usual morning abatement was absent and the fever continued with little variation to the end, and this too with no local inflammation to account for it, save such inflammation of Peyer's glands as is supposed always to be present in this fever.

In presenting these cases I have tried to avoid all the details not bearing especially upon this subject, my object being to call attention to this one feature, hoping to hear from others who have used the thermometer in their diagnosis of this and other affections.

The Sympathetic Nervous System.

A PAPER READ BEFORE THE WAYNE COUNTY MEDICAL SOCIETY BY DR. C. HENRI LEONARD.

The custodian of nutrition, secretion, and involuntary motion—indeed the engineer of all animal life—is so new a field to the anatomist as well as to the physiologist and pathologist, that I fear I shall but cumber your ears with many words in endeavoring to treat of it before you.

ANATOMY. —In a dissection of the cadaver we find disposed along both sides of the bodies of the vertebræ pairs of ganglifform enlargements, linked together by little chains of nervous tissue extending from the cranium to the coccyx. Branching off from these ganglia at irregular intervals there are other filaments centering around some common points, and these, after a slight, web-like expansion (plexus), send off smaller branches to the viscera and vessels. These ganglia, with their chains of connections and branching filaments and plexuses, make up,

anatomically, the *nervus sympatheticus.* In man we find this system the greatest developed; indeed, just to the degree that we find this system developed in an animal do we find that animal among the higher orders, and as a direct corollary we find that just in proportion to the development of this system is the development of the circulatory and nutritive functions manifested. These ganglia, on dissection, are found to be of an ashy-grey color, reddened somewhat by the presence of nutritive capillaries that may have remained unemptied after death, and also by a natural pigmentary cell deposition. They are invested by cellular tissue; are, upon maceration, found to consist of filaments, with an inter-filamentary substance of greyish, pulpy matter.

There are twenty-nine pairs of these ganglia (exclusive of the numerous *peripheral* ones in the walls of the heart, uterus, intestines, &c.), arranged along the spine, and each has three sets of branches.

(*a*) Those of intercommunication.

(*b*) Of communication with the cerebro-spinal nerves, except the olfactory, optic and auditory.

(*c*) Branches of distribution, or of organal supply. Besides these branches of supply it receives branches from the spinal system. And as is true of all nerve trunks the fibrillæ are separate and distinct from each other, so that even in the branches of intercommunication, where the white or spinal filaments are found, they each retain their individuality, and can be traced back to their origin. There is inosculation of the two sets of fibres though no inter-fibrillation. I wish to insist on this anatomical fact, for, to me, it affords a better explanation of certain phenomena than some of the theories now in vogue which seem to have lost sight of this anatomical fact.

These white nerve fibres are called by the older physiologists, branches of the ganglia nervi sympathetici. I do not

take them to be such; I believe them to be the branches from the cerebro-spinal axis to the sympathetic bearing the motor and sensor filaments from the cord.

The branches of distribution from these ganglia reach all the blood vessels, the abdominal and thoracic viscera, and all the organs of special sensation, in fine are systemic in their ramifications.

The cervical ganglia essentially supply the heart with the filaments from this nervous system, viz., by the superior, middle and inferior branches. From the dorsal ganglia are given off the splanchnics, the two great visceral nerves; the "greater" being formed by a union of branches from the 6th to the 10th; the "lesser" by the union of branches from the 11th and 12th, the former terminating in the semi-lunar ganglion and the latter in the renal plexus. Branches from the semi-lunar ganglia go to form the "*solar plexus*," the great source of sympathetic supply to the viscera of the abdomen. In these plexuses are found the ramifications of the different cerebro-spinal nerves.

The PHYSIOLOGY of this system is, as I have said, but little known. Indeed, some authorities go so far as to say that its influence upon the system is *nil*; prominent among these stands Dr. J. C. B. Williams. Magendie even goes so far as to ask "*if it is a nerve at all!*" Dr. Proctor thinks it is *only* for regulating the *tonus* of the arterial system.

It is not necessary to go further into the individual "opinions" of authorities; these are sufficient to show you the status of "beliefs" prior to 1850. Whether at the present day we have any such doubters I know not. The general opinion is, however, something as I stated in my first sentence. The experiments of Bernard, Flourens, Weber, Sir Astley Cooper, Brown-Sequard, Dalton, Flint, Vulpian, Rœver, Schiff, Meryon, &c., would seem to put at rest the cavil of Williams, Magendie, and their school. Besides being the *tonus* of the circulatory

excretory and secretory systems, it exercises an "inhibitory action" over the other nervous functions, sometimes changing their usual manifestations entirely, by a process of substitution. As, for instance, an irritated or inflamed uterus producing *nausea*, instead of giving a regional manifestation of its disease by pain, &c., within the pelvis. One oldish author, Philip, also Wagner, looked upon the sympathetic ganglia as simply re-inforcers of nervous power; that is, the force traversing its proper nerve filament from the spine, passes through the ganglia of grey matter (similar to that which gave origin to the force—the grey matter of the brain) of the sympathetic and adds unto itself thereby more force, or power; just upon the same principle that we join three or more cells together to increase the volume of the current that we wish to employ from our galvanic batteries. It seems quite probable to me that this might be so, though not in such an exclusive sense as they proposed it. The phenomena, in part, are explanable upon the theory of "inhibitory action." Nerve power and electricity are certainly easily interchangeable, if nothing of kin, and this fact alone would seem to give great weight to the old theory of Philip as being, at least in part, true. This being the case, then, we have for our sympathetic nervous system three functions, viz: that of *tonus* to the circulatory and other organic functions; 2d; that of inhibition; 3d, that of re-inforcement to the previously induced nerve current from the cord or brain.

The contractility of the arterial vessels was first pointed out either by Senac or by Ens; the latter's work was published in 1745; authorities differ as to which of these should have the credit. Not until 1851, however, was the vaso-motor system demonstrated. To Bernard belongs the credit of this. His discovery, making known the dilatation of these vessels after section of their sympathetic filaments, was only half of their nervous influence upon the parts to which they were distributed. To Brown-Sequard is due the credit of demonstrating the con-

tractility of arterial vessels by stimulation of the vaso-motor filaments. This was at about the same time. To him is also due the discovery of the "reflex inhibitory action" of the same system. In 1851 he had noticed that a plunge of one hand into cold water brought on a contraction of the capillaries and a lowering of temperature in the other. Indeed, the period extending from 1850 to 1852 (including the latter), marks the era of all the important discoveries, so far, of the physiological action of the nervous system under discussion.

There is yet another point under discussion, and it is in a fair way of being soon settled, I think, and that is, the *true* relation between the sympathetic and cerebro-spinal system. Prof. Jewell's theory seems the more plausible, as it is more complete. Vulpian, Waller, Bidder and Valkman recognize only in the grey filaments from the ganglia to the cord a proper tonic supply to the vessels of the cord and the pia and dura mater. To this Jewell adds, "a portion of these fibres pass into the cord for conveying impressions into the cord for reflex purposes in reflex actions."

Recently, and chiefly through the labors of M. Vulpian, it has been demonstrated that the walls of the veins contain unstriped muscular fibres; if this be so, *a priori*, it would only be in the domain of analogy to attribute to the veins the power of contractility through nervous stimulation, and the power of dilatation through nervous paralysis. M. Vulpian has even proven this, and cites other authorities that have witnessed similar phenomena. There seems, however, to be a limit to the contractility of the veins, for in some varieties the muscular fibre is not found; as for instance, in that of the brain sinuses and its larger vessels. Possibly upon this ground (the contractility and dilatility of the veins) the physiological explanation of "an erection" (of either the male or female organs) is more satisfactorily explained than by any other way. I shall

refer to this again. The capillaries, I believe, have not been recognized as harborers of the sympathetic muscular fibre, that of the unstriped order, hence, are beyond the direct influence of this system.

We have now reached, so far as the researches of the action of this system under different conditions have been carried, the following conclusions: Without naming authorities or experiments we find that

1. Any stimulation of this system produces, in the parts supplied by the filaments stimulated, *(a)* a contraction of the arteries and veins through the *tonus* exerted upon their unstriped muscular coatings; *(b)* an increased peristaltic action of the bowels, and accelerated physiological function of the other viscera; possibly as a result of the irritation occasioned by the diminution in the volume of the organs resulting from the diminution in size of the blood vessels; *(c)* if not a direct result, it is certainly assisted by this volumetric change.

2. That any paralysis of this system produces phenomena essentially the opposite of the above.

I now pass to the consideration of some of the phenomena exhibited by the normal and the vicious action of this system. I have just spoken of how "an erection" is explainable upon the workings of the sympathetic. You have only to get a paralysis of the fibres supplying the corpora, &c., when you at once get dilatation of the arteries and veins—the reflex phenomenon that we call an "erection." The paralysis is easily explainable upon the phenomenon of arrest, that is, either by "thought" or the action of an amorous mind, of ascarides in the rectum, of an irritated prostate or bladder or uterus, full intestines (as after a hearty supper), the warmth of the back (from a feather bed, &c.); from any of these a nervous current may be established and conveyed by the cerebro-spinal nervous system to these ganglia, and so by its inhibitory action, check the tonic or nor-

mal action of the nerve cells that are custodians of the tonicity of the pelvic or sexu-organal vessels, and hence dilatation ensues. A continuation of this same action, or one similar, at last may produce the orgasm. Here, then, is quite a ready explanation of our spermatorrhœas and other sexual mal-functions. It is theory, I admit; so are all other conclusions upon the same subject. It seems the more plausible one to me, and so I give it for what it is worth. Treatment, at least, bears it out.

I give another example. Ex-mayor Barker was recently drowned in our river; he was a good swimmer, and also had a large, or fatty, physique, which was in his favor, yet before succor could reach him he was gone past recovery, although floating at the top of the water. The diagnosis was made, "death from apoplexy." Well, it might have been apoplexy, and it might *not* have been; the chances are as much against apoplexy as in its favor. To be apoplexy there must have been inter-cranial hæmorrhage, and pressure resulting from blood accumulation. Yet hæmorrhage was not necessary to have caused his death; indeed, I am inclined to think that there was no inter-cranial hæmorrhage; that death resulted from compression of the brain without hæmorrhage, and from asphyxia, (his face and feet were under water, though the back was above it). The physiological action of this sympathetic nerve explains the whole phenomena. You shower the abdomen or back with cold water, and immediately there is a dila tation of the cerebral vessels through the loss of their tonicity. Plunge a person into cold water and the same phenomena are observed. The peripheral sensor nerves here manifest an inhibitory action over the sympathetic cells that supply the tonus of the cerebral vessels, and a paralysis ensues; the result of that sympathetic paralysis being dilatation of the brain and brain membranal vessels, and, as a consequence, a compression of

the brain pulp, and death ensuing just as certainly as if hæmorrhage had taken place. It isn't the hæmorrhage that kills, but it is the compression that the brain receives. Yet Mr. Barker had coupled with this compression, asphyxia, and this was everything against him, for the compression from dilatation is soon relieved, cerebral anæmia being finally the result of a cold plunge. I admit that this same dilatation might have caused apoplexy; but that is a long step in advance of what might have caused death. In other words, it is a poor financial policy to go to Toledo via Chicago. "Apoplexy" is getting to be a favorite shield for doctors to use to cover up their ignorance of physical functions. If we only had more *post mortems*, and less of this professional self-assurance, humanity and the profession would be the gainers; and less cases of "apoplexy" would be recorded.

Let us take another example. Old John Hunter insisted that a blow upon the abdomen would stop the heart's action. It was known long before his time that it did so stop, but it was only regarded as an accident rather than a necessary sequence. To this phenomenon this old surgeon could give no satisfactory answer. Brown-Sequard has solved it, and all through the action of this sympathetic nerve, that was unknown in Hunter's time. A paralysis of the nerve cells (peripheral, probably) that supply the *tonus* to the heart ensues, through an inhibitory action of the par vagum from the shock communicated to the diaphragm.

In peritonitis we have death from a similar reason—a paralysis of the cardiac sympathetic filaments. Probably this is an explanation of the success of the opium treatment.

In quite extensive burns of the skin we know death is imminent; not so much from uræmic poisoning as from excessive nervous irritation, which induces functional nervous disturbance. Sloughing of the duodenum almost invariably occurs,

and by reason (to me) of the action the cerebro-spinal system of nerves (sensor, &c.), in conjunction with the sympathetic, which is custodian of the nutrition of this part. From lack of proper nutrition this gangrene or sloughing ensues.

This calls to my mind another malady that surgeons and physicians are taxed to their uttermost to prevent. I refer now to "bed sores," serious complications in the low nervous cases they accompany. Pressure is not the progenitor of these sacral sores, as physicians so commonly think. "Air cushions" are of little or no avail in warding them off, and are useful only in alleviating painful pressure upon the sore, and so give ease to the patient. The trouble is due, essentially, to nervous lesions—lesions of the cord or the nerves therefrom, that by their action check the proper nutrition of the parts involved. In some cases of these bed sores. sacral or on the nates sloughs occur within three days from an injury that confines a previously healthy man to his bed. Pressure could never have occasioned this, had the man nothing better than a saw-log to rest upon. Brown Sequard has proven by experiments upon dogs, which, when lying down, do not rest at all upon the back or nates, that an injury to the cord which causes an inflammation of it or its nerves, results in a slough of the nates just as we see in the bed-ridden cases of humanity. Want of nutrition, then, is the cause of these serious complications, and this arises from a disturbance of the sympathetic nervous system, with possibly the other system now proposed by Brown-Sequard that controls the chemical changes of nutrition. Carrying this on still further, the same author asserts that inflammation of the lungs is extremely common in certain brain diseases; and we all know that bladder, kidney and intestinal lesions are common, in fact the rule, after spinal lesions. The normal brain power is arrested by the abnormally acting cerebro-spinal cells, induced by irritation or inflammation, and a contraction of the arteries and stoppage of blood supply results.

In a great majority of our reflex uterine diseases it is this sympathetic system that is the mischief-worker, through its abnormal action. Neuralgias, that are systemic, numbness, prickings, aphasia, hemi-crania, insanity, etc., etc., of the uterine sufferers can all be traced to some fault of this system of nerves. Indeed, the vast majority of *all* nervous diseases have more or less assistance from this nerve, if their entire dependence be not upon its malfunction. This is, of course, explainable upon the phenomena of inhibition. Our epileptic seizures are now regarded as due to anæmia of the brain induced by an over-action of the nerve filaments that supply the arterial and venous coats, thus adducing a contraction of the vessels. This effect is due to an inhibitory action that may have as its cause centric or eccentric irritation. At last the "spasm" of the vessels goes away and we get a corresponding nervous relaxation (congestion) which throws the patient into the customary sleep after each seizure, something similar to our opium stupors.

Leaving this most interesting part of the subject, I proceed to the consideration of its medication. Here, also, I am compelled to mourn a want of remedies acting directly upon this organism, commensurate with our want of a perfect knowledge of its pathology and physiology. There are a *few*, very few, drugs out of our vast array of weapons in our herbal or mineral *armamentarium* that have a special determination to this system. Stille, in his classification of "spinants, (Tetanica)" gives us but two drugs, the nux vomica and the faba sancti ignatii; with a mention, under other headings of three more, viz.: toxicodendron (stimulant), ergota (emmenagogue), sodii boras (irritant). A spinant—a remedy that acts upon the cerebro-spinal system—need not necessarily be a sympathetic stimulator; indeed, I can conceive of a spinant proving, by an inhibitory influence, a sympathetic paralyzer. Yet, some of the remedies, possibly all, just mentioned, are sympathetic irritants (stimulant); as for in-

stance, nux vomica, and its alkaloid strychnia, faba ignatii sancti (and its alkaloid strychnia) and ergota have been abundantly proven as such—they leading to the contraction of the muscular fibres supplied from this sympathetic system. There are two other classes of remedies that exercise a similar influence, viz: belladonna and electricity. Heat (calor) also has (judging from its capillary action) a tonic influence, after the first stage of dilatation has passed, whereas cold (frigus) seems to have an opposite influence; probably the action of both may, more or less, be due to the interchanging phenomena of arrest, over the two systems, cerebro-spinal and sympathetic. Of all of the remedies electricity and nux vomica (or strychnia) stand the most prominent; the former also having a new power, that of exciting muscular contractibility even when all nerve life is dead.

The theory of the action of all of these remedies is about the same in each drug, and I need not single any one out for description. This action is that of a direct stimulant to the nerve cells, and, as a resultant of this stimulation, a checking of the abnormal action of the nerve cells of the other system, when administered in disease. Of course no one of the remedies acts singly and alone upon any one of the systems. It would be too much to try and single out these separate actions, as our friends the homœopaths have done, in these days of pathological and physiological ignorance. Yet, that the remedies I have mentioned have proven direct stimulators to *this one* system seems to me to be now an incontestable fact. Certainly ergota has been proven to produce sloughs (similar to our "bed-sores") from its holding the arteries in constant (tonic) contraction; and nux vomica you all know is a contractor of the dilated bloodvessels, also as is electricity. If we have a dilatation of these arterioles, etc., the vasa vasorum of the nerves, we certainly will have pain or paralysis, or both, resulting from this pressure; and if these remedies act, as is conceded, by blood contact, then it is just those

points most dilated that will receive the lion's share of the remedy,and so the evil influence must be properly and efficiently combated by meeting the enemy upon his own ground and without evil consequences to the system at large. The success of treatment, in administering these remedies, including the bromides (which I consider more directly *spinal* sedatives) in cases of neuralgia and paralysis, with this view of the pathology of the malady, certainly sustains the views just advanced.

Memoir of Dr. Benjamin Rush.

READ BEFORE THE GRAND RAPIDS MEDICAL AND SURGICAL SOCIETY, JANUARY 3, 1877, BY G. K. JOHNSON, M. D.

Our meetings are devoted chiefly to practical subjects. Disease; its nature, its infinite varieties, and its most efficient correctives, are the topics which rightfully claim our attention. Each one in coming here is expected to bring some new fact, some fruit of experience, or some new suggestion as an offering to the common treasury of knowledge.

But whilst we thus occupy ourselves mainly with technical matters; with things, indeed, which may give us light and guidance in daily duty, we may nevertheless find both interest and profit in occasional digressions into less practical fields.

Exclusive devotion to technical subjects, and unremitting professional routine, may, indeed, narrow the understanding and enfeeble the faculties.

On the other hand, to turn aside now and then from the beaten paths, tends to relieve the tedium of professional thought, to freshen the spirits and to open up new subjects for reflection.

The history and biography of medicine furnish rich fields for such diversions. Therein are found inexhaustible stores of entertainment as well as instruction. Medical biography, in particular, is a domain replete with interest. The story of the life and labors of medical men who have reached great distinc-

tion and usefulness, and whose names mark epochs in the history of our art, cannot fail to amply reward those who study it. For it should not be forgotten that knowledge and progress in medicine are, for the most part, the fruits of the recorded labors of such men.

I propose, therefore, to bring before you this evening, in brief outline, the career of the distinguished Dr. Benjamin Rush.

There seems, indeed, to be a special fitness in calling up at this time the life and services of one who was prominently and honorably connected with the opening events, both professional and political, of the centenary period which has just closed.

Jno. Rush, the great-grandfather of Dr. Rush, was a captain of good repute in the armies of Cromwell. Discontented with the restoration of monarchy in England, he came to America in 1683, and settled on a farm thirteen miles from Philadelphia. On this ancestral homestead Benjamin Rush was born on the 24th of December, 1745. When six years of age his father died and his mother assumed the care of his education. When nine years of age he was placed in the private school of Rev. Dr. Finley, at Nottingham, Md. In this school, which was a model of its kind, the young pupil advanced rapidly in classical studies. At fourteen he entered Princeton College, and in the year 1761, when about seventeen years of age, he received the degree of Bachelor of Arts from that institution. While here he was marked for great studiousness and for aptitude in learning. He also displayed notable talents for both elocution and rhetoric. On this account most of his friends advised him to make law his profession. But his early and wise friend and tutor, Dr. Finley, turned his thoughts and ambition toward medicine. Accordingly he entered the office of Dr. John Redman, then the most noted physician in Philadelphia. Here he remained six years, prosecuting his studies with great diligence and success. Already he

had acquired those scholarly tastes and methodical habits which marked his life. During these six years, besides his regular studies, he translated the Aphorisms of Hippocrates from their original Greek, and some of the works of Boerhaave and Sydenham from their original Latin. He also made careful notes of all important facts and cases within his knowledge. This practice of noting facts and observations he maintained through life, and he thought it of great service to him. He thereby accumulated a vast fund on which he never failed to draw in moments of need.

At the end of these six years of pupilage with Dr. Redman, Rush had mastered all the medical knowledge within reach in his native country, and he was forced to decide as to his further steps.

Here I trust I may be pardoned for a moment's digression in order that I may refer to the state of medical matters in this country at that time, namely, about the year 1767, while our fathers were yet the dutiful and loyal subjects of the British crown.

The colonies had then a population of less than 3,000,000, scattered in sparse settlements along the Atlantic border; but the adventurous pioneers were pushing their difficult way towards the interior. Philadelphia, then the most considerable town on the continent, had a population of about 24,000. But population was rapidly increasing; and settlements were multiplying with equal pace. These circumstances created a growing demand for medical men; but medical men were deficient both in numbers and in qualifications.

There was not a medical college in America, nor any facilities for a proper medical education. With a few exceptions, the practitioners were not graduates. Yet the practice of medicine was under the regulation of law. The colonial statutes undertook to guard the people against mere pretenders. Some colo-

nies required examination and license by a medical board. In others, county courts granted license on some certificate of study or qualification. In others, again, the mere certificate of a practitioner that a young man had studied under him for a stated time was a sufficient warrant. After one or two years of office-reading, varied by the compounding of the crude drugs which constituted the Pharmacopœia of that period, the student would begin to "ride" with his preceptor, and would then soon become a full-fledged doctor. This "riding" with his preceptor was the only clinical training the student could then receive. Such were the kind and the extent of the professional education of most of the physicians of that day. Imperfect as it was, it is nevertheless true, that some of these men became skillful and distinguished practitioners. Industry and natural talents enabled them to surmount difficulties and the defects of education. Not a few, especially during the revolutionary era, reached eminence in professional and in public life, and left honorable records behind them.

There were, however, a few physicians in the country who had received a thorough scholastic and professional training. Of these, some were of foreign birth and education. Others were natives of the colonies who had gone to Europe for collegiate and professional education. These graduates in medicine were chiefly located in the more important towns, and were generally, by virtue of high character and attainments, the standard bearers of the profession in America.

Medical literature, too, was as scanty as the means of education. Not a medical book or journal had yet been published on this side of the Atlantic. In 1797 the first medical journal was published in America. Medical books were imported from Europe, chiefly from England. Medical libraries comprised but few books, frequently not more than two or three; but these were read and re-read until they were literally worn out with thumbing.

But I return to my subject. Young Rush, we have seen, was now at the end of his six years of pupilage with Dr. Redman, and so well had he improved his opportunities that he was considered fully qualified for practice. But to begin practice then was not his purpose. In him superior abilities were associated with high aims. Hence he had not thought of taking his course through life along the levels of mediocrity; but on the contrary, his eye was steadily fixed on the summit of his profession. He determined, therefore, to seek in Europe that fullness of training and knowledge which was not attainable in his own country. Accordingly he went to Edinburgh in 1766, and entered the Medical College there. That city was then the chief seat of medical education in Europe; and Cullen, then in the zenith of a world-wide fame, was the great star. After two years' attendance in that institution he took his medical degree. His Thesis, written and defended in Latin, was so noticeable that it received the unusual honor of publication. The winter after his graduation he spent in the hospitals of London, and the summer following in Paris, still gathering knowledge with eager avidity.

In the autumn of 1769 he returned to Philadelphia, and entered at once upon his long, busy and eventful career.

His professional preparation, we have seen, was deliberate and thorough. It comprised nine years of diligent and varied study. In those days a medical degree could only be secured after long and thorough pupilage. A diploma was, at least, evidence of careful technical training. It was not then the cheap and unmeaning script which, in too many instances, it has in later times become.

Soon after Rush returned to Philadelphia he was appointed to the chair of Chemistry in the Medical College of Philadelphia, and a few years later was transferred to the chair of Theory and Practice.

This was the first medical college in America, and when Rush became connected with it, it had been two or three years in existence. It had graduated a few students the year before this connection began. The founders of this school, and the colleagues of Rush, were Drs. Morgan, Shippen and Bond. They, with Rush, were the honored pioneers of medical education on this continent.

In 1791, this school was merged in the University of Pennsylvania; and it has ever since been known as the medical department of that University. It is therefore the oldest, as it has unquestionably been the most prosperous and influential professional school in the country.

When the schools were thus merged, Rush took the chair of the Institutes and Practice of Medicine and of Clinical Medicine; and this he retained until his death in 1813. He was thus a teacher of medicine from 1769 to 1813—an eventful period of forty-four years. During these years, the duties of his professorship were interrupted only by the vicissitudes of the Revolution, to which reference will presently be made. During all this time Philadelphia was the focus of medical culture and education in this country; and Rush, like Cullen, in Edinburgh, was the great attraction. So long as he lived, ambitious students gathered in that city from all quarters.

As a teacher, he was always exceedingly attractive as well as instructive. His influence and his opinions were paramount. But few teachers in any age or country have held such sway over pupils. His genius, his learning, his eloquence and his glowing enthusiasm, enchained all who came into his presence; and his admiring classes carried his teachings over the country and faithfully adhered to them as the highest prescripts of medicine.

The name of Rush is identified with many practical advances in medicine; but I have time only to refer to two or three.

He was the first to discover and to teach the true pathology of the dropsies. Dropsy had previously been regarded as a distinct, primary disease; but he pointed out that it is a secondary affection, a symptom or result of some visceral lesion. I need not, before this society, dwell on the clinical importance of this revelation. He also greatly improved our knowledge and treatment of hydrocephalus. His enlightened views of this affection were the results of careful clinical and autopsical studies.

To him is due the credit of emancipating the American medical mind from thralldom to European authority. Before his time, the physicians of this country had, for the most part, been servile followers of foreign practice. But Rush showed that American diseases have a character and type of their own, and that they require a therapeutics of their own. He not only gave the first impulse to independent medical thought, but by the freshness and vigor of his teaching and writings, he laid the secure foundations of that medical literature which has since so honored the American name.

One obvious fault mars the otherwise practical and luminous teachings of Rush. He constructed hypotheses or doctrines of disease, which he caressed with parental pride and defended with all the resources of his vast learning. All men of genius have their conceits; and, having genius, are apt to impose their conceits upon the world as true philosophy or wisdom.

Rush had his doctrine or speculation of the unity of disease; his doctrine of the nature and unity of fever; his doctrine that debility is the predisposing cause of all disease, and some others.

But I need not allude to them further. In regard to them, one and all, it only need be said that they are mere conceits or hypotheses; and that hypothesis is not science.

But after all, the age, rather than the man, is chargeable

with his fault. At that time and previously, hypothesis or an ideal philosophy was the fashion in medicine: speculation was more employed than induction. It is only in later times that the inductive or demonstrative methods are laying the solid foundations of medical science.

But his speculations did not influence Rush at the bedside. There experience and reason were his guide.

As a practitioner, Rush was always in high credit. His practice was bold and energetic, yet discriminating. On the one hand, he scorned that weak dalliance which looks on with folded arms, while disease does its deadly work; on the other hand, he was conservative and gentle when he thought nature could be safely trusted. In disorders, which tend naturally towards a fatal issue, he thought it folly and crime to trust anything to nature, the inadequacy of the natural powers being shown by the fact that the disease, if left to itself, goes on towards death. In such cases, he thought it the duty of the physician to treat boldly and vigorously. In all acute diseases, especially in those of a sthenic type, he bled lavishly.

His practice would now be considered heroic and harsh; yet his skill was unquestioned and his success very great, if we may trust contemporary opinion.

In 1793 an epidemic of yellow fever broke out in Philadelphia, which, in extent and in fatality, is without a parallel in modern times. Six thousand people are said to have been sick with it at one and the same time; and within the short space of three months four thousand victims were swept away by it. All business was suspended and the streets were deserted; and historians tell us that the city was a gloomy solitude. Panic and despair seized upon the living; and all who could sought safety in flight and distance. I am sorry to add that most of the doctors joined the fugitives. Three or four only remained at their posts; and of these the most prominent was

Dr. Rush. With a devotion and heroism that would have crowned a soldier with laurels he gave himself to the succor of the scourged inhabitants. The labors he performed during these dreadful months seem now almost incredible. He literally gave himself no rest; he seemed to be everywhere and always on duty. At last his own powers weakened and broke; but he refused to leave the city, as his friends importuned him to do, saying he had resolved to remain at his post of duty, regardless of personal consequences. Fortunately, he soon rallied, and resumed his labors.

In the beginning of the epidemic the treatment employed was entirely ineffectual. The disease mocked the doctors. Rush first used the remedies which had been found useful in an epidemic which had prevailed in Philadelphia thirty-one years previously; but he found them useless in the present outbreak. He then tried in succession the various modes of treatment recommended by different authorities, but none were satisfactory. It almost seemed as if there was no remedy, and that the disease must be left to riot without restraint.

In this exigency he remembered a manuscript account of a similar epidemic which had prevailed in the colony of Virginia in 1747. This manuscript had been written by a Dr. Mitchell and given by him to Benjamin Franklin, who in turn had given it to Dr. Rush. In this Dr. Rush found facts and observations which suggested new views of practice. One hint thus obtained was, that apparent debility or depression does not contra-indicate the use of evacuants; and that the most extreme apparent debility was often at once relieved by an active purge or by venesection. Rush was prompt to act on these hints, and he soon found satisfaction in the new and vigorous mode of treatment. From that time on he bled and purged freely, and in his hands the practice was eminently successful. Soon his praises were on every tongue and his fame spread far and wide.

But during all the pressure and hurry of this epidemic, Rush was studying it with a keen, analytical scrutiny. No fact or phenomenon escaped him. Everything, indeed, which could throw light on the origin and nature of the disease was carefully noted. Thus prepared with facts and data, he soon after published a monograph on the disease. In this he maintained that the malady had a local or domestic origin; that it started, *ab initio*, in the city itself, from bad sanitary conditions, concurring with favoring states of the atmosphere. He rejected altogether the theory of a foreign origin and importation, which was then current. This view gave great offense to some of the merchants and property owners. They fancied they saw in it danger to their pecuniary interests. If it were understood that the dread disease could originate in the city from local causes, they feared that business and commerce would seek other marts.

These mercenary calculations combined with certain professional jealousies to assail Dr. Rush; and he became the object of a most bitter and unscrupulous warfare. Falsehood and scurrility were freely used against him. His views were mis-stated and his practice satirized. His doctrine of the domestic origin of yellow fever was fiercely assailed. The people and the press took sides in these hot contentions, and for many months the agitation was quite equal to that of a presidential election,

But Rush, who, during all this turmoil, had shown not the slightest irritation, at last achieved a complete triumph. In Philadelphia and throughout the country he not only took rank as the leading physician and the highest medical authority, but he was regarded as a great public benefactor.

Here it should be remarked that his recommendations with regard to the prevention of yellow fever gave the first impulse to the sanitary protection of cities. They caused Philadelphia

to be supplied with water from the Schuylkill for the purpose of washing and cleaning the streets. They also caused Boston to be supplied with a system of underground sewerage—the first in America.

His labors and writings and recommendations at this time and subsequently, concerning matters of public health, helped to give him a position of authority and influence which no other physician in the country has ever attained. Kings and emperors sent him tokens of appreciation; learned societies in Europe sent him testimonials and enrolled him in honorary memberships; and the most famous European physicians wrote in praise of him.

But were we to pause here we should leave out of view much of the lustre which attaches to the name of Rush. Pre-eminent as a physician and medical authority, he was no less conspicuous as patriot and statesman. It was his good fortune to live in the heroic age of his country, and his rare merit enabled him to take a leading part in the grand events of that age. I need not recount the story of the Revolution. I can only say that the long yearnings and struggles of the Anglo-Saxon race for liberty and self-rule were about to be realized in the New World. But the most intense intellectual activity and political commotion preceded and accompanied the event. From the beginning of this agitation Rush sided with the colonies; and throughout he upheld their cause unfalteringly, and with all the warmth and vigor of his nature. He was amongst the first to declare for separation from the mother country. His prophetic vision already discerned the coming glories of the nation yet unborn. At the beginning of agitation in 1774, Rush was thirty-one years old. He had been five years in practice, and he was popular, influential and ardent. He had a happy talent for popular oratory, and this he employed in behalf of the cause of liberty. He wielded an effective pen, and this he dedicated to the same service. He also prompted others to write

in the same cause. It was he who induced the celebrated Thomas Paine to write and publish his pamphlet entitled "Common Sense," which, all historians agree, did more for the cause of liberty and independence than any other single publication.

I cannot, however, go into the details of the public services of Rush during those memorable years; but I come at once to the critical days of July, 1776.

After heated and prolonged debates, the Declaration of Independence was adopted in the Continental Congress on the 4th of July of that year. But a majority of the delegates from Pennsylvania remonstrated against it and retired from the Congress. Thus Pennsylvania was on record as against the declaration. But the party of independence, headed by Rush, now put forth a supreme effort, and the colony was brought triumphantly into line with the other colonies. A new convention of the people was called, and new delegates were chosen to take the place of those who had opposed the declaration. Rush was one of these new delegates, and was chosen expressly to sign and defend that great chart of liberty. On the 19th of July—fifteen days after the date of the declaration—he entered the Congress and affixed his signature to that instrument; and *thus linked his name forever with the most momentous political event in the annals of the world.*

It is to me a proud satisfaction to advert here to the fact that five of the signers and upholders of the Declaration of Independence were men of my profession. They were, besides Rush, Joseph Bartlett and Matthew Thornton, of New Hampshire; Oliver Wolcott, of Connecticut, and Lyman Hall, of Georgia.

Did time permit, it would also give me pleasure to extend this reference to medical men who in that trying era rendered important and distinguished services to their country, both in cabinet and in the field.

After the close of his service in Congress, Rush was in various ways untiring in his efforts to uphold the American cause. In 1777 he became Physician General, and afterward Surgeon General, of the Middle Military Department. In the latter capacity he was present at the battles of Princeton and Brandywine. But peace and independence came at last. Rush then and thenceforth devoted himself with great zeal to his practice, to the duties of his professorship, which had been interrupted by the war, and to medical authorship. Yet he continued to take a broad and enlightened interest in public affairs and in the condition of the people. New institutions were to be founded and new governments organized. At first these were necessarily imperfect, and did not yield the rich benefactions which sanguine patriots had anticipated. Rush saw these defects with the clear eye of a statesman, and labored intelligently to remedy them. He advocated certain changes in the constitution of Pennsylvania. He advocated the adoption of the present Federal Constitution to take the place of the old Articles of Confederation. He was so earnestly in favor of the present constitution that he consented to serve as a member of the State Convention which was called to decide on its ratification or rejection.

He secured a revision of the criminal code of Pennsylvania in the interest of humanity and justice. Before that time capital punishment was inflicted for many crimes besides murder. He secured the abolition of this barbarous penalty in all cases except murder in the first degree.

The pillory, the chain-gang and the whipping-post were seen in the streets of Philadelphia. His earnest remonstrances caused them to disappear.

About the year 1789 the use of ardent spirits had become so prevalent as to threaten the most serious consequences. In this emergency Rush wrote and published a pamphlet, which was

republished throughout the country, in which he demonstrated with remarkable force and clearness the physical and civil evils of the use of spirituous liquors. Hildreth, the historian, makes special mention of this pamphlet, and attributes to it a wide and salutary influence. Thus Dr. Rush must be considered the original (as well as the most influential) advocate of temperance in America.

He was an early and decided advocate of popular enlightenment, and of free common schools. He always insisted that, as our institutions rest on popular suffrage and our laws reflect the popular will, it is absurd to expect a wise policy or a good administration if the suffragists were ignorant and degraded.

For more than forty years Rush was an industrious and versatile writer. Notwithstanding the wearisome labors of his practice and of his professorship, he found time to make many important contributions to the Republic of Letters. As an author his style was fresh, original and perspicuous. His works were comprised in seven or eight volumes. Most of them are devoted to medical subjects, but one or two to miscellaneous topics.

But the life of my subject presents so much material, that it is impossible, in a paper like this, to even touch upon the more salient parts of it, and I must go no further.

Dr. Rush was always an enthusiastic lover and cultivator of his profession. It is not too much to say that he did more by his high character, his learning, his varied accomplishments and his noble example to give tone and elevation to that profession and to secure for it popular consideration, than any other physician America has yet produced. To his memory the profession in America owe the richest tributes of honor and gratitude.

The Metric System.

BY W. H. LATHROP, M. D., RESIDENT PHYSICIAN, STATE ALMS HOUSE, TEWKSBURY, MASS.

As this very convenient system of weights and measures is in use in the institution with which I am connected, I take the liberty of saying for it a word of commendation, and of making a few suggestions which may be of value to others who contemplate adopting it.

We have used it exclusively now for about three months, and see daily evidence of its superior value.

The tools required are few and not expensive.

We purchased a ten cubic centimetre graduate and another of one hundred cubic centimetres, though the last was not really necessary. From these, the old graduates were marked with a diamond, so that the minim graduate could be used for 10 cubic centimetres, the 4 oz. graduate for 125 cubic centimetres, and the half pint for a litre.

In marking for small quantities mercury will be found more available than water, on account of the difference in capillary attraction. The mercury gives a more definite line. The marks are first made with a finely pointed pencil on paper, pasted perpendicularly on the graduate, and then other lines adjoining these can be easily made with a glazier's diamond. The graduates thus marked will show, at a glance, the relations between the two systems, and will be very convenient in public dispensaries where both systems are used.

Of weights, we obtained two sets. One, of best quality and very accurate, for small scales, is made of platinum and brass, ranging from .01 gram (one centigram, grain 1/6) to 20 grams. The other is made iron, ranging from 10 grams to 1,000 grams (one kilogram, about 2 pounds.)

These weights prove to be just what is needed. They were

obtained from the Metric Bureau in Boston for five dollars. I mention the price because many are deterred from getting the weights by the high price usually charged for them.

One more acquisition and the armament is complete. This is a table showing the relations between the old and new systems, of a convenient size for ready reference. For this purpose I know of nothing better than the annexed table which has been sent to me by T. Metcalf & Co., and which I perceive has been favorably noticed by the *Boston Medical and Surgical Journal*:

A TABLE FOR REDUCING TROY WEIGHTS TO GRAMMES.

Troy Weights.	Gramme Weights.	Troy Weights.	Gramme Weights.
Grain 1-10	.006	Grains 80	5.18
" 1/8	.008	" 90	5.83
" 1/6	.011	" 96	6.22
" 1/4	.016	" 100	6.48
" 1/3	.022	" 120	7.75
" 1/2	.032	" 150	9.72
" 1	.065	" 160	10.37
" 2	.13	" 180	11.66
" 3	.19	" 200	12.96
" 4	.26	" 240	15.55
" 5	.32	Drachms 6	23.3
" 6	.39	" 8	31.1
" 8	.52	" 10	38.9
" 10	.65	" 2	46.6
" 12	.78	" 14	54.4
" 15	.97	" 16	62.2
" 16	1.04	" 20	77.7
" 18	1.17	" 24	93.
" 20	1 29	Ounces 4	124.
" 24	1.55	" 5	155.
" 30	1.94	" 6	186.
" 36	2.33	" 7	217.
" 40	2.59	" 8	248.
" 50	3.24	" 9	279.
" 60	3.89	" 10	311.

TABLE FOR REDUCING FLUID MEASURE TO CUBIC CENTIMETRES.

Fluid Measure.	Cubic Centimetres.
Fluid Drachm ½	1.84
" 1	3 69
" 1½	5.53
" 2	7.38
" 2½	9.22
" 3	11.07
" 4	14.76
" 5	18.4
" 6	22.1
" 7	25.8
Fluid Ounce 1	29.5
" 1½	44.3
" 2	59.
" 3	89.
" 4	118.
" 6	177.
" 8	236.
" 10	295.
" 12	354.
" 16	472.
" 20	591.
" 24	709.
" 30	886.
" 32	944.

It is not desirable, in writing decimal prescriptions, to first write the quantities in the old way and then translate them. It will be found easier, both for the physician and the apothecary, to have the prescriptions adapted originally to the metric values. The following will illustrate:

Solution containing 4 fl. oz.—32 doses of 1 drachm each.

	Translated:
℞ Morphiæ sulphatis.....grs. v	gm. .32
Chloral.....ʒiv	gm. 15.55
Syrupi.....fl. ʒj	cc. 29.5
Aquæ .....fl. ʒiij	cc. 89.

M.

S. Take a teaspoonful as directed.

Instead of sending to the apothecary the translated prescription, as above, it will be better to write one *de novo*, as follows:

Solution containing 100 c. c.—20 doses of 5 c. c. each.

℞ Morphiæ sulphatis..... .... gm. .2
Chloral.....gm. 10.
Syrupi.....cc. 25.
Aquæ .....cc. 75.
M.
S. Take a teaspoonful as directed.

It will be perceived that in both of these prescriptions the quantities of morphia and chloral contained in each dose are substantially the same.

In administering medicines we use a teaspoon containing 5 cc. and a tablespoon containing 20 cc. One fluid drachm contains 3.69 cc., but experiment will easily show that this cannot be depended upon as the size of a teaspoon; in fact it is very frequently the case that one of these utensils contains 6 cc. If then we direct the patient to take a "teaspoonful," with the expectation that he is to get a drachm only of the solution prescribed, we are often deceived, since the patient's teaspoon may contain nearly twice that quantity. I think, therefore, that in allowing 5 cc. as the capacity of the teaspoon, no injustice is done to that time-honored vehicle. Of course, where practicable, the graduated medicine glass should be used instead of spoons.

With regard to the denominations, we have found it most convenient to use only the gram and the cubic centimetre, never writing centigram, decigram, etc, but relying upon the decimal

point to express these values. This, I believe, is the usual custom with those who write decimal prescriptions.

Some have advised the omission of the abbreviation, leaving it to be understood that "gm" is meant in the case of solids and "cc" in the case of liquids, but it seems to me that the abbreviation should be always expressed.

Persons, who wish to become fully informed as to the value and scope of this system, will find it profitable to correspond with the Metric Bureau of Boston (No. 1 Tremont Place), by whom they will be furnished with information or appliances. All decimal weights and measures are now furnished by this Bureau at *cost*, but in a short time a small profit will be charged. They supply also a very comprehensive chart, one metre square, which fully illustrates the relations between the various weights and measures.

We who have learned the doses of medicines according to the old tables, will have some difficulty in transferring that knowledge to the metric system, but that is about the only obstacle to be encountered, and one which a very little persistence will overcome. Students, however, who are now for the first time learning the doses of medicine, will have much less difficulty in remembering the new than the old, and they will thus save themselves the trouble of afterwards making the change. It seems to me that the time is not by any means far distant when the United States will follow the example already set by nearly every civilized nation, and practically adopt this Decimal System.

Reports of Societies.

Detroit Academy of Medicine.

DETROIT, December 12, 1876.

The Society met at the office of Dr. Inglis: the Vice President, Dr. Tiffany, in the chair.

The reading of the minutes of the previous meeting was dispensed with.

The gentlemen who were to have read papers—one advocating the unity, the other, the duality of diphtheria and croup, at this meeting, were unavoidably absent.

Dr. Connor said he would like to have the expression of the meeting on this question, and introduced the subject as follows: He had been much interested in looking over the mortality reports of the city of Philadelphia, in regard to the number of deaths from croup and diphtheria. He found that they were nearly equal: males were affected in a slightly increased ratio in each disease. In both diseases, there was an increased number of cases from the 1st to the 5th years of age disappearing after this age in about equal proportions for each disease. He had enquired into the original signification of the terms croup and diphtheria. Dr. Patrick Blair, in a letter to Dr. Meed, in 1713, calls pertussis "croops." The root from which it is derived signifies "cry, or hoarseness." As first employed, it meant stridulous breathing; since then. it has been employed to designate laryngitis—spasm of larynx—and diphtheritic laryngitis. Apparently the stridulous breathing, a common symptom, being the basis of nomenclature.

Diphtheritis, means inflammation of skin, applied first by Bretonneau, to inflammation of skin or mucous membrane, attended with formation of false membrane. "It is a specific contagious, asthenic general disease, characterized by exudation in certain situations of a peculiar caco-plastic lymph which, together with epithelial cells generally forms a thick, tough and stratified pellicle. This false membrane is not produced by inflammation; is not an ordinary lymph; it is a stroma made up of mucous and epithelial cells, arranged in super imposed layers; even fibrillation is observed in the texture of the layers, but the layers do not consist of albumen or fibrin." (J. R. Cormack's comparison of diphtheritic laryngitis with the true croup.)

French writers use the term diphtheritis, to cover several affections, true croup included. For some affections of the larynx, they use the term croup, as laryngeal spasm. When diphtheria involves the larynx, they call it croup. On the other hand, English authors describe diphtheritic laryngitis, and true croup, as distinct diseases. The Dr. said that he had taken the pains to consult several of the best English authors, in order to compare the diseases which they described under the titles of "Diphtheritic Laryngitis and True Croup," and found that the descriptions given were so nearly alike, that it seemed as if they were describing one disease under two names.

The Dr. gave the following comparative synopsis of diphtheritic laryngitis and true croup, as taken from the authors referred to:

DIPH. LARYNGITIS.

"Incubation from 2 to 4 days; is usually ushered in by general or constitutional symptoms, followed by local symptoms, referable to the throat or to other parts."

ANATOMICAL CHARACTERS.

Redness at first; then swelling and increased secretions of viscid mucus, then diphtheritic deposit, commencing at any one point, or several points; extending and coalescing so as to form extensive patches, or even to cover the entire surface. The patches, are variable in color and consistence. On removing them, a raw bleeding surface is left, which is speedily covered by a fresh deposit.

Microscopically the material consists chiefly of epithelial and glandular cells, with molecular granules of fat and protein; sometimes fibre and disintegrated tissues are present, vegetable growths are sometimes present, lymphatic glands in the neighborhood are enlarged.

TRUE CROUP.

"Idiopathic croup is frequently preceded by some premonitory symptoms for a day or two, such as a slight, harsh cough and hoarseness, sore throat; some pyrexia and constitutional disturbance."

ANATOMICAL CHARACTERS.

Redness at first; then swelling, and increased viscid secretion; thin croupous deposit. This may be limited to a small portion of the surface or to separate patches, or it may cover the whole of the larynx and trachea. Its thickness varies from a mere film to two or three lines or more. Its consistence is variable, and fresh deposit not uncommonly forms after the membrane is separated, and this may be repeated several times.

Under the miscroscope, it is seen to consist of an amorphous or finely fibrillated substance. The lymphatic glands in the neighborhood are enlarged.

SYMPTOMS OF LARYNGEAL DIPHTHERITIS.

Exudation begins in larynx; laryngeal symptoms prominent from first. High pyrexia; feeling of great illness; weakness; pulse very feeble.

Duration, 2 to 14 days.

DIPHTHERITIC LARYNGITIS.

Cause of death—Apnœa, Asthenia, Septicæmia, Uræmia, Secondary nervous disturbance.

Prognosis: always more grave in children than in adults.

TREATMENT.—Air of room should be kept at 65°, and moist with steam. Children should have a tent made over their cribs, and steam conducted beneath it. Advantage of emetics is questionable. Nutritive diet, ice; keep bowels open. Local applications, gargles, &c.; tracheotomy.

SYMPTOMS OF LARYNGEAL CROUP.

Voice at first harsh; finally whispering or lost. Paroxysm of spasmodic cough, interrupted by crowing inspiration. Respiration is greatly impeded. High pyrexia at first; subsequently abates.

Duration, 1 to 14 days.

TRUE CROUP.

Cause of death—Apnœa or Asthenia.

Prognosis: Croup is a most fatal disease; prognosis is worse in young infants.

TREATMENT.—Air of room kept at 65°, and moist with steam. Children should have a tent made over their crib and steam conducted beneath it. Emetics sometimes useful, cold compresses, local applications, gargles, nutritious diet, tracheotomy

Diphtheritic laryngitis and true croup are not to be separated. Both are highly contagious and infectious diseases. They are interchangeable; croup may spread from diphtheria and vice versa.

If asked if there was any difference in these diseases, should say there was not. Croup is a symptom; diphtheria is always a disease. It will be said that there are a variety of types of diphtheria. The same may be said of typhoid fever. Typhus and typhoid were considered to be identical until separated by Louis. There is a laryngitis which is a grave disease, but use the term laryngitis and leave it there; no use of adding croup.

Dr. Cleland asked Dr. Connor if the so-called cases of infantile croup would not produce diphtheria if innoculated elsewhere.

Dr. C. answered certainly.

Dr. Noyes said he had not given the subject much attention; could only speak from his own experience and observation; had always considered them distinct diseases. Both are characterized by an exudation at the upper portion of the air passages. In true croup the pseudo-membrane generally limits itself to the epithelial layer; in diphtheria it goes deeper, invades the whole substance of the mucous membranes, and is often followed by mortification of it and contiguous tissues. When the disease invades the air passage lower down, and in the larynx, the exudation is generally more superficial; and here it is that they seem pathologically to resemble each other. But the systemic infection and constitutional disturbance and its contagious and infectious character are the strong points which serve to distinguish diphtheria from true croup.

Dr. Jenks said that he had not given the subject any special attention, and that Dr. Connor's remarks corresponded entirely with his own views. He had seen a good many cases of true croup, but had never seen a case but what he considered it analagous to diphtheria. He said the old writers mentioned two kinds of croup, true and false, and up to the time he was a student there was no other division. The Dr. said that it was not until after the works of Bretonneau and other French authors came out that he began to consider the pathology of croup and diphtheria for himself, and since that time, had held that they were identical as he could not find any essential difference in the progress, treatment or mode of death in these diseases. The membranes are the same microscopically and macrosopically. In relation to the point of difference raised by Dr. Noyes, it does not militated against the theory of their unity.

Dr. Cleland thought a point that argued against the unity of the diseases was, that true croup never spread through a family from a given case. He said that the croupous

membrane never extended from the larynx to the fauces, while he had often seen diphtheria proceed from the fauces to diphtheria of the larynx. In acute membranous croup the invasion stage is shorter and sharper, the temperature is higher and membrane does not proceed from the fauces, but attacks the latter at once. The patient dies of apnœa simply. In diphtheria the invasion stage is not so marked; the temperature is lower, the membrane often extends to the larynx, etc. Patients die from extreme exhaustion. Diphtheria is often followed by paralysis, and is a highly infective and contagious disease. Croup is not. He related several instances where diphtheria had attacked a member of a family, and from whom it spread to all the members, often being very severe in its consequences; but he could not recollect a single instance where he had observed the same thing in true croup.

Dr. Noyes—If the diseases were identical we should look for similarity in results; in diphtheria, as sequelæ we have palsy of the muscular apparatus of the throat, of the extremities and of the accommodation in vision, with squints; sudden death from syncope, palsy of the heart; had seen a patient suddenly expire in this way after weeks of convalescence; had never seen these things occur in croup.

Dr. Connor,—We would have the same results but the patients do not live long enough for them to be produced. We see in croup plenty of cases where tracheotomy has been performed, and air passages opened, the same general results following that we get in diphtheria, the patient dying from exhaustion, etc. We have a sthenic form of diphtheria, like the croup Dr. Cleland mentioned. The most of the cases are asthenic; almost every disease has a sthenic and an asthenic form. The paralytic symptoms are sequelæ, and are due to the effects of the poison on the central ganglia or medulla.

Dr. Noyes,—That is not known. Some claim that it is due to a paralysis of the peripheral nervous apparatus.

Dr. Connor,—But when we take into consideration that patients die who have plenty of room for the entrance of air, it would seem to militate against peripheral nervous paralysis.

Dr. Noyes,—It does seem to me we have abundance of evidence to prove that the local symptoms are entirely different in croup. It does not spread so rapidly. In diphtheria it spreads rapidly; he had seen the membrane extend from the pharynx, and cover the whole Schneiderian membrane. And in one case which came under his observation he believed it invaded the prima via.

Dr. Chapaton said that Bouchut in Paris called it diphtheria so long as the membrane confined itself to the fauces and contiguous parts; but if it invaded the larynx he then called it croup, and the admission cards would be changed, so as to read croup instead of diphtheria.

PREVAILING DISEASES.

Dr. Inglis reported Chicken-pox as prevailing in his practice. He had had several cases of diphtheria. He recommended as a local application, a powder composed of equal parts of bicarb. of soda, salicylic acid and sulphur, applied by means of an insufflator.

MISCELLANEOUS.

Dr. Jenks said that there had been an error made in Dr. J. H. Beech's diploma,—the doctor's name was incorrectly spelled, and the date of the diploma was not right—and moved that the treasurer be authorized to correct diplomas as wished by those to whom presented.

No further business, the society adjourned.

J. D. MUNSON, M. D.,
Secretary.

DETROIT, December 26, 1876.

The society met at the usual place.

In the absence of both the president and vice president, Dr. Noyes was elected president, *pro tem.*

PREVAILING DISEASES.

Dr. Bradley reported a few cases of scarlet fever, all the cases being of a mild type.

Dr. Inglis inquired of Dr. B. if he used any prophylactic measures to prevent its spread in a family.

Dr. B. said that he used sweet spirit of nitre simply.

Dr. Cleland mentioned an extremely severe case of scarlet fever, that was at that time under his care. The patient, a child, had been ill five days, and suffered all that time with maniacal delirium. No sedative had any effect in controlling the patient.

Dr. C. also had seen quite a number of mild cases of diphtheria located between Antoine and Hastings streets. In one instance a whole family, the mother and father included, were attacked with the disease at intervals of a few days. In the house adjoining there was one isolated case. The Dr. could discover no local cause.

The Dr. also related a case that he had been called to see in which the patient had taken an ounce and a half of oil of tansy in order to bring on a miscarriage; she believing herself to be pregnant. The first symptom noticed was convulsion, and at the time the Dr. first saw her, she had every evidence of acute gastritis with a tendency to peritonitis. Temperature 101½°, pulse 135. He gave a very grave prognosis. No miscarriage was produced.

Dr. Noyes said he would like to ask the gentlemen present if they have had any experience with the oil of tansy, and if there was any virtue in it for the production of abortion. He remembered a case in which the patient took a large quantity of the oil, and came near dying in consequence, but it failed to bring on miscarriage.

Dr. Cleland remarked that he had known of several cases where it had been taken to produce abortion, but it was always inefficient. He said he had been told by druggists that extract of cotton wood was used.

Dr. Carrier mentioned a case of puerperal fever, and asked if there were any other cases in the city. He did not know how she became infected.

Dr. Yemans said that within a very short space of time he had met with two cases of Colles' fracture, and a compound fracture of forearm. He also reported small-pox as prevailing in his practice.

Dr. Chapaton mentioned a case of abortion that had been produced with an umbrella wire. The wire pierced the womb through the lateral vaginal cul-de-sac, and was followed by quite extensive hæmorrhage, and a small hæmatoma.

Dr. Carrier related the case of a woman who aborted at the 3d month, a fœtus that did not appear more than six weeks old. The woman still continues to enlarge. Dr. C. raised the following query: "Was the woman pregnant with twins, and was not one expelled?"

Dr Connor related the results of a post mortem examination that he had made the day before. There had been doubt in the case as to diagnosis, and many physicians had seen the patient. The symptoms were chills, followed by fever and sweating; resembling intermittent fever very closely, and resisting every method of treatment. During the fall vomiting occurred once or twice, and a small quantity of blood was thrown off with the matters vomited. Two or three months before death a hard lump in abdomen was discoverable, just below costal cartilages, and to the right of the median line. There was no diarrhœa and no derangement of any of the excretory organs. The patient, aged 78 years, gradually sank and died.

The examination was made 12 hours after death; rigor mortis well marked; abdomen and contents examined. Abdominal incision made in the usual manner; the edge of the left lobe of the liver was pale and attached to the stomach for an inch and a half near the pyloric portion. The right lobe of liver contained nodules of whitish appearance, on section these were

found solid. The rest of the liver had undergone extensive fatty degeneration. The right lobe was attached very firmly posteriorly by a hard nodular substance that surrounded the cœlic axis, solar plexus and head of pancreas, the small portion of the latter not being involved. The pancreas was, however, very easily separated from the mass. Nodules extended down the back bone as far as the pelvis. On opening into the stomach it was found much dilated towards the left; in the portion between the pyloric and cardiac orifice, there was a large ulcer the edges of which were attached to the liver; the floor being made up of the liver and the nodular substance. The kidneys were nodular, and contained several large cysts. The coats of the aorta were filled with calcareous deposits. The Dr. said that severe manipulation of the stomach ante-mortem might have separated its attachments to the liver, resulting in leaving a large opening directly from the stomach into the peritoneal cavity.

Dr. Connor moved that the secretary be authorized to procure a suitable book, and that the secretary and treasurer be elected a committee to copy therein the Constitution and By-Laws with their amendments, and procure the signatures of the original signers as far as practicable thereto. Carried.

No further business, the society adjourned.

J. D. MUNSON, M. D.,
Secretary.

Joint Meeting of the Wayne, Washtenaw and Oakland County Medical Societies.

HOLLY, December 7, 1876.

The Union Medical Society of Wayne, Washtenaw and Oakland counties, met at Holly, at 10:30 A. M., Vice President Dr. Johnston, in the chair.

Dr. Johnston presented a patient, whose eye had been injured a few weeks since, by a spicula of iron, flying from a hammer, entering the eye at the lower and outer angle of the cornea.

The President appointed Drs. Hagadorn, Swift and Wade, as committee to examine the patient. They found that adhesions had formed in the iris; and that it was impossible to dilate the pupil. They found, also, that there was opacity of the crystalline lens, and were of the opinion that the eye was irreparably injured. Dr. Watson, recommended iridectomy.

Dr. Riker reported a case of ovarian tumor, which he aided Dr. Wixom in removing. The pedicle was cut too short, the ligature slipped and hæmorrhage ensued. A second ligature of cat gut was applied, which became softened and also slipped off, on third day. Patient died from hæmorrhage.

The Society next proceeded to the election of officers for the ensuing year, as follows:

President—Dr. R. Johnston.

Vice Presidents—1st Dr. A. D. Hagadorn, 2nd Dr. E. Watson.

Secretary—Dr. E. A. Chapman.

Treasurer—Dr. G. W. Lowery.

Censors—Drs. A. W. Riker, N. C. Hall and J. W. Fletcher.

Dr. Riker introduced a patient for examination. The President appointed Drs. Hall, Lowery and Watson, as a committee for that purpose. They find it to be a case of hydrocele of spermatic cord of six years' standing. This case brought out a general discussion as to treatment. Some would let it alone; others would inject tincture of iodine; others would use the seton. Dr. Swift would use some astringent and stimulating liniment with suspensory bandage. The discussion of the subject of the injection of iodine was varied and interesting.

AFTERNOON SESSION.

The Society met according to adjournment.

Dr. Chapman read a paper on "Pathology and treatment on Pneumonia," and the society entered upon a general discussion of the subject. Dr. Wade relies much on the use of anodynes; not merely to relieve pain, but thinks by relieving the irritability they will lessen the inflammation.

After a somewhat lengthy discussion in regard to the position the State Medical Society has taken in respect to the medical department of the University of Michigan, the society adopted the following resolution:

Resolved, That the Union Medical Society of Wayne, Washtenaw and Oakland counties, advise the State Society, to only so amend its constitution in regard to the admission of new members as not to exclude graduates of any Medical College, whose entire faculty is eligible to membership.

Moved and adopted by the Society, that the Secretary send to the Secretary of the Michigan State Society, a copy of the above resolution. The Society then adopted the following:

Whereas, It has seemed good to the Almighty, to deprive our worthy and esteemed fellow-member Dr. Jas. M. Hoyt, of his sight, that special sense which has been most dear to him: and

Whereas, The intimate relation, long held by him, to the members of the Union Medical Society and profession at large, render it proper that we should place upon record our appreciation of his services as a co-laborer and an estimable citizen, therefore,

Resolved, That we tender to him, in his affliction, our earnest sympathy and consider him a member of this Society, with a remission of his fees.

On motion, the Society adjourned.

E. A. CHAPMAN, M. D.,
Secretary.

Abstracts From Exchanges.

Practice of Medicine and Therapeutics.

Pus Corpuscles—New Theory Respecting Their Formation.—Dr. Chas. Heitzmann (*Medical Record*, May 13, 1876,) says that the matter commonly called protoplasm is built up of a true net work, formed by masses of living matter united to each other by delicate thread-like connections, and suspended, as it were, in a material not endowed with properties of iife. The nucleus is nothing but a compact mass of living matter, and its behavior, when treated with chloride of gold, is the same as that of other elements of living matter. The matter between the cells is not lifeless, but is a substance amply provided with living elements. An animal, according to this theory, represents a mass of living matter, the denser accumulations of which, formerly called cells, were connected by more delicate, thread-like processes of the same living matter; and in the meshes of this net work is suspended a fluid in which various corpuscles, such as blood corpuscles and pigment granules might float. The so-called cells are made up of granules and threads of living matter, which unite the nucleolus with the nucleus, the nucleus with the periphery, and the threads permeate the substance between the so-called cells, thus effecting a union, one with the other, throughout the entire body. The so-called cell is but a fractional part of the innumerable whole.

To the development of inflammation, blood vessels, either in the part or its immediate neighborhood, are indispensable. The first step in the inflammatory process was a softening or liquefaction of the glue giving basis substance, and a retrocession to the embryonic appearance of the protoplasm, in which the protoplasmic elements were again rendered visible. At the second step in the inflammatory process, the living granules,

very often the nucleus, increased in size; living matter to a certain amount was produced; every such corpuscle, a living granule increased in size, was capable of producing new elements; and all these elements were united with each other by means of the delicate threads to which reference has been made. Now, if those thread-like connections between the enlarged granules of living matter became torn asunder, as they might from the tension produced by a large amount of exudation, if by any means the single elements were separated, they at once were pus corpuscles. Pus, therefore, is metamorphosed tissue: pus corpuscles are elements of a former tissue, separated from each other. Pus is not tissue, nor is it capable of producing tissue. A pus corpuscle is a newly formed protoplasmic lump.

Disease Germs—Present Conditions of the Evidence Concering Them.—The Public Health section of the International medical congress after hearing and discussing a paper on the above topic by Dr. Thomas E. Satterthwaite adopted the following conclusions. *(Med. News and Library, Oct. 1876)*

1. So far as inquiry has been made as to the results of the active principles in infective diseases it is probable that in a certain number the matter is molecular in form and in some instances in no sense a soluble substance.

2. In regard to the causes of septicæmia, pyæmia, puerperal fever, erysipelas and hospital gangrene and in cholera, small pox, the carbuncular diseases of men and animals of typhoid and relapsing fevers, and diphtheria, there is not satisfactory proof that they are necessarily connected with minute vegetable organisms.

3. The real nature of these causes is still uncertain.

Bacteria—Their Nature and Relations to Disease.—Dr. T. E. Satterthwaite *(Med. Record Dec. 1875)* in some interesting discussion of this, concludes.

1. Bacteria are certain vegetable organisms which prob-

ably belong to the algæ; they are found abundantly in nature but chiefly where there is moisture.

2. They exist in the body in health covering the mucous membranes from the mouth to the arms, and sometimes to penetrate a certain distance into the system without causing symptoms of disease.

3. They also exist in putrifying fluids and in various diseased processes, occuring in hot and cold abscesses, in the blebs of erysipelas and in simple blisters.

4. It is doubtful whether the virulent principle of infective diseases is albuminous.

5. This principle does not reside in the perfectly clear fluid that passes through porous clay. In putrid infectious fluids this appears to be certain. The poison is rendered less virulent by repeated filtrations through common filter paper.

6. The virulent principle may be boiled for hours, filtered numbers of times in the ordinary way, boiled with alcohol, and again filtered and dried, and yet the watery extract of such a dry residue will produce septic symptoms. It is therefore soluble or at least suspended in water.

7. The liquid which is thus poisonous may be clear to the eye but contains granules under the microscope.

8. These granules have not produced bacteria in a number of instances when they were placed in a suitable condition to do so.

9. We cannot therefore feel that satisfactory evidence has been brought to show that in any of the diseases or processes enumerated minute organisms are the sole and efficient causes of disease.

Fever Pathology.—Dr. H. F. A. Goodridge *(Brit. Med. Jour.*, July 29, 1876*)*, in a very interesting sketch of fever pathology, sums up our positive knowledge as follows:

The characteristic elevation of temperature of the body in

fever is mainly due to increased production of heat. Besides the increased production of heat there is a disorder of nutrition, an abnormal disintegration of the tissues of the body, and particularly of the muscular tissue, evinced, on the one hand, by increased excretion of urea and of potash salts, of carbonic acid, and perhaps also by water; and on the other by progressive loss of body weight. The increased production of heat occurring at a time when a principal source of normal heat production, viz., the food ingested, is all but completely cut off, must have its origin in the abnormal disintegration of tissue. The converse may also hold good to a greater or less extent, there being thus action and re-action. However probable may be the hypothesis of the intervention of the nervous system, the connecting link between the entrance into the organism of the fever excitant, the pyrogenic matter (be this *contagium vivum*, or or what it may), and the onset of the characteristic phenomena, has not yet been demonstrated. In short, the proximate cause of fever remains undetermined.

Inflammation and Congestion—Their Relations.—Dr. G. R. Peaslee (N. Y. *Med. Jour.*, Jan. 1, 1875), summarizes his views on this subject as follows:

1. Inflammation is not a mere state of a part, as quoted from Celsus for almost 1,700 years, in which there is redness, heat, pain and swelling. It is a process going on in a part; and the four signs just mentioned do not distinguish it from still another pathological condition.

2. Congestion is merely a state of a part in which redness, heat, pain and swelling may exist, but it is not a *process*.

3. Inflammation has its own characteristics, immediate effects and sequelæ, if any at all ensue, and they very frequently do ensue. Congestion, also, has its own effects and sequelæ, both differing, however, from those of inflammation, and much more rarely ensuing.

4. Inflammation is *not the reparative process*, as is still asserted on the now obsolete authority of Hunter, who would scorn such a proposition were he the physiologist of to-day instead of a century ago. But it is directly opposed to and preventative of it. If inflammation attack a wound while healing, the reparative process is at once arrested and a retrograde action ensues till the inflammatory process ceases.

5. Inflammation is a process *sui generis*, as shown by its phenomena and effects; the reparative is another process unlike all others in its symptoms and results. The former is always pathological, always to be deprecated and rarely to be invoked, the latter is always a physiological process and always desirable in the circumstances in which it can occur.

6. Inflammation is always the same process wherever found, though modified by the structure and the state of the part. It very rarely occurs primarily in the muscular tissue, whether striated or non-striated. Congestion is also rare in the former and very common in the latter, and in the uterus and the ovaries it is, during menstruation, a physiological condition.

7. Inflammation is frequently accompanied or followed by suppuration and by ulceration, but both of these may occur independently of it. The presence of either in a part, therefore, is not to be accepted as proof of the previous existence of inflammation there without other corroborative facts. Suppurative and ulcerative inflammation are terms really indicating no peculiarity in the process itself, but only in the disposal of the inflammatory exudation.

8. Inflammation is essentially an acute process which may be repeated an indefinite number of times in a part with intervals of varying duration, though always itself characterized by a short duration. Congestion, on the other hand, may continue through protracted periods—many months and even many years.

9. Chronic inflammation is, therefore, a contradiction and a chimera. The so-called chronic inflammations of the uterus are simply chronic congestions; actual inflammation may, however, recur from time to time, in a chronically congested part, there to rapidly run its course and disappear.

Temperature in Intoxication.—Dr. J. J. Reincke *(Deutsch. Archiv. of Klin. Med.) (The Clinic,* Jan. 22, 1876*)*, gives the following remarkable case: A young laborer, aged thirty-four years, was brought to the police station one February morning when the temperature of the atmosphere was 33.8° F. The temperature in his rectum was only 75.2° F. He was frozen perfectly stiff, and no reaction of any kind could be obtained. The temperature of his body gradually increased, and by the next morning had become normal, when he was allowed to go home feeling perfectly well. This person had become intoxicated, and was picked up in the streets.

Physiology.

Chemistry of the Brain.—Dr. Thudichum (*Brit. Med. Journal,* Sept. 2, 1876) gives the results of a large number of very careful observations on the above subject. The labor expended in the researches was enormous. Two thousand brains were used. Those of the ox were found most available. He found:

1. Brain mattter contains a large quantity of water chemically combined with various substances so as to form a colloidal mass, thus permitting great mobility of particles and also penetrability of other substances by liquid diffusion.

2. The brain contains "a considerable amount of an albuminous base" which, according to Dr. Thudichum is not present in a liquid unattached form as in serum, but appears to be governed by matters peculiar to the brain.

3. There are certain substances found in large quantities in

brain matter though not peculiar to it. These he has divided into three groups.

a. Phosphorized Bodies, containing five elements, carbon, hydrogen, nitrogen, oxygen, and phosphorus. All these bodies contain the phosphorus in the form of phosphoric acid which is combined with glycerine. Under various processes glycerine phosphoric acid is produced. It was found that they differ among themselves in the mode in which they contain the nitrogen and the acid radicals. Accordingly they are split up into sub-groupes; the kephalines, the myelines, and the lecithines. The distinctions between these bodies are as follows: The kephalines possess the tendency to be oxidised—oxidisability; the myelines are not easily changed by any agent or influence and possess therefore stability; the lecithines easily fall to pieces, they are afflicted with lability. Dr. Thudichum points out that these phosphorised bodies have a remarkable diversity of affinities; for example, alkaline affinities for acids, acid affinities for alkaline, and alkaloid affinities for salts. These affinities are overcome by water in quantity, but the affinity for water is in turn overcome by such metallic oxides as those of lead, copper, manganese iron, etc. The inference is, therefore, that if these substances do exist as such in living brain matter, we have an incalculable number of states or conditions of this matter, and thus "it foreshadows on the chemical side the remarkable properties which nerve matter exhibits in regard to its vital functions. From this it also follows that nerve matter must yield obedience to every, even the slightest, external chemical influence which may reach it by way of the blood. It must take up metals, acids, salts, alkalies, and alkaloids presented by the blood; it can retain only oxides when the serum is again free from the combinants. A watery serum will wash the brain; a more watery one will make it swell and displace mechanically what it can; a still more watery one will make the

brain dropsical and produce all the conditions of mechanical pressure on the brain."

b. Nitrogenised Substances containing four elements but no phosphorous, such as cerebrin, stearoconate, ect. These are less soluble than phosphorised bodies—more stable compounds, and less liable to oxidation. They are colloidal and do not pass through the septum of the dialiser.

c. Oxygenated Principles, containing only three elements, viz., carbon, hydrogen, and oxygen or cholesterine. In this research eighteen bodies have for the first time been discovered as ingredients of brain matter. The practical importance of these inquiries is manifest and we trust that Dr. Thudichum will continue his good work.

Thermal Influences Proceeding from the Hemispheres of the Cerebrum. — Drs. Eulenburg and Landois, (*Centralblatt; Lond Med. Record*, August 15, 1876,) record some results of a series of experiments with reference to the heat centres of the cerebrum. The conditions of the experiments were such as to justify the conclusions:

1. Destruction of certain regions of the anterior lobes of the brain corresponding to the temporal region, caused at once a considerable increase of the temperature in both contra-lateral extremities. The increase of temperature occurred immediately after the complete destruction of the corresponding parts of the surface of the brain, often before the animal awoke from the chloroform and before it made any spontaneous movement. The increase immediately after the operation may be 5° to 7° Cent., in other cases only 1½° to 2° Cent.

2. The thermal areas for the anterior and posterior extremities are separated from each other. The area for the forefoot lies somewhat external, close to the lateral end of the sulcus cruciatus. Destruction of the supra-sylvian gyrus has no thermal effects.

3. In successful cases, after the animal awakened from the chloroform, there generally was disturbance of motion, and it seems that the portions of the surface of the brain which have this thermal action must lie in the neighborhood of the corresponding motor areas.

4. The increase of the temperature is in nearly all cases clearly pronounced for a long time after the injury, sometimes even for three weeks; generally, however, it returns to the normal on the second or third day. Localized electrical stimulation of the above areas, with sufficiently weak currents, is accompanied by a small and temporary diminution of temperature in the contra-lateral extremities. From these facts the author thinks there is a vaso-motor apparatus in the gray matter of the brain, and that it partly represents the central terminations of the vaso-motor nerves which run in the cerebral peduncle.

Ovulation Theory of Menstruation.—Dr. A. Reeves Jackson (*Am. Jour. Obstet.*, Oct. '76), in an elaborate paper discusses the evidence on which the ovulation theory of menstruation is based and summarizes his argument as follows:

1. Ovulation and menstruation may each occur independently of each other.

2. Ovulation is the irregular but constant function of the ovaries, while menstruation is the regular rythmical function of the uterus.

3. Ova are matured and discharged from the ovaries at all periods of female life, from early childhood to old age, both before puberty and after the menopause—hence one cannot be the sign of the other.

4. Menstruation is the consequence of conditions established by the structurally completed uterus, and depends upon ovulation *only* for its origination.

5. The mucous membrane of the uterine body is the only organ essentialy concerned in the menstrual act—the uterus

proper, the ovaries, Fallopian tubes and vagina have their functional activity increases however, by receiving a share of the general pelvic congestion, which accompanies the process.

6. The menstrual congestion of the pelvic organs, of the ovaries in particular, is of all causes the one most likely to determine the ovipont, when a Graaffian vesicle is sufficiently mature, and hence ovulation and menstruation are frequently concurrent.

7. The theory that would make menstruation dependent upon ovulation fails to account for the possible occurrence of pregnancy at any and all times between the menstrual periods, for multiparous conceptions, for the frequent persistence of menstruation after the removal of both ovaries,for the non-interference with menstrual regularity by removal of *one* ovary, and for the menstrual derangement and the shifting of menstrual periodicity from mental emotion.

8. All the known facts in regard to both ovulation and menstruation are consistent with the theory that after the latter is once established the two functions proceed side by side but independently of each other, the former occurring at irregular and the latter at regular intervals—while on the contrary many of these facts are wholly inconsistent with the theory that assumes a necessary ovular maturity and rupture at each menstrual period.

Influence of the Fifth Nerve on Intra-ocular Pressure.—Dr. Bull *(N. Y. Med. Record,* Aug. 19*)*, says that by irri tating the medulla at the deep origin of the fifth nerve the intra-ocular pressure is always increased, and lasts some time after cessation of the irritation. The result of irritation of the fifth is always the same whether the cervical sympathetic was previously divided or not. The explanation is probably as follows: The first cause of increased tension is an active dilatation of the blood vessels of the choroid and iris; the fact that the

irritation of the fifth nerve increases the tension even after evacuation of the aqueous humor proves that secretion or transudation of the ocular fluids occurs somewhere during this irritation. It is further proved by another experiment, if we divide the spinal cord between the occiput and the third cervical vertebræ no considerable increase of intra-ocular tension is produced, but when the fifth nerve is irritated in the same animal there is.

Color-Blindness in Sailors.—Drs. Feris and Favre *(Brit. Med. Jour.*, Nov. 15, 1876*)*, from special investigations, have ascertained that of 2,408 collisions at sea from 1859 to 1866, 536 may be imputed to a wrong interpretation of color signals at night from the color-blindness of the officer in charge. Of 502 sailors examined by the above gentleman, 9.4 per cent. were color-blind. Stokers and engineers are among those who suffer most from color-blindness.

Smut of Corn—Its Physiological Action.—Prof. Lombrose *(N. Y. Med. Jour.*, Dec. '76, Lo Sperimentale*)* has discovered in the oil of the smut of corn a special alkaloid which he calls pellagroznia. The physiological action of this new principle is analogous to that of strychnia, viz.: exaggeration of the sensibility and of the muscular contractility which constitutes the basis of tetanus. There are other analogies in the local caustic action, in its anti-putridity, the retarding action on the heart, the respiratory paralysis, and in the phenomena presented after death.

It was also noticed that narcosis follows the tetanic action of pellagroznia in the same manner that it does that caused by strychnia. Further, in the oil of spoiled corn there is a second poison which has an action evidently analogous to cicuta and opium manifesting itself by paresis and by paralysis of the inferior extremities, salivation, coldness, somnolence, insensibility and clonic convulsions associated with fibrillary contractions.

Comparing these phenomena with those presented by patients suffering from pellagra he finds a close analogy. From these facts the author concludes that not only is pellagra due to spoiled corn, but also that in the poisonous products of fermentation the cryptogamic form is of slight importance, while the chemical mutations are of very great weight.

Surgery.

Port Wine Mark—Its Removal Without Scar.—Dr. Squire gives the following method for the removal of port wine marks: Freeze the part to be operated upon by means of the ether spray until perfectly insensible; then scratch it with an ordinary cataract needle with parallel scratches; then place a piece of blotting paper on it before it has been thawed and consequently before it has begun to bleed, pressing it firmly on the skin for five minutes. After half an hour wet the paper with cold water and remove it carefully in the direction of the scratches, for if peeled off transversely to them it will begin to bleed. The surface of the skin will be found to be covered with a thin clot of blood, which should be carefully washed off with an camel's hair brush, moved in the direction of the scratches. The surface may then be coated with a thin film of glycerine by means of the brush by which any subsequent hot and hide-bound sensation is avoided. The scratches need not reach more than half through the thickness of the skin—not more deeply than the sixteenth of an inch at most and should not be farther apart than the sixteenth or thirty-second of an inch. Should the operation require to be repeated it may be undertaken within a few days, in which case the scratches must be made in a direction oblique, or transverse to the original ones, and this may be repeated as often as may be required. No scar whatever remains and no trace of the mark is left within a fortnight after a successful operation.

Sciatic Nerve United by Suture.—Mr. Farrell (Boston *Medical Journal*) stated that Mr. Wheelhouse inserted sutures into the ends of a divided sciatic nerve with apparently the ultimate result of obtaining union between the two portions, and restoring functional continuity. Langenbeck has since performed the same operation in a case in which the nerve had remained divided for two years. Two months after the operation there was an increase in sensation, but not in motion.

Tartrate of Iron and Potassa in the Treatment of Varicose Ulcers.—A two, four or six per cent. solution of the tartrate of iron and potassa (with the addition of a little ammonia to prevent precipitation) is reccommended as a dressing for varicose ulcers. The solution is applied by means of charpie which is saturated and applied to the ulcer morning and evening, at first, and when cicatrization has commenced, in the evening only. Over the charpie place a dressing of simple cerate; should there be much pain, dress with opium cerate for a few days, after which use the solution exclusively. The charpie must be fine and the cerate covering abundant. Remove the charpie dressing after having saturated it so completely as to allow its removal without the retention of a single filament by the sore, as that would disturb the healing process.

Injections of Chloroform in Sciatica.—A number of cases are reported of inveterate sciatica which had resisted all the usual remedies, in which deep injections of chloroform wrought rapid cures. The hypodermic syringe needle was inserted to its full length into the buttock or thigh, and from thirty to fifty drops of pure chloroform injected. None of the general effects of the chloroform or malaise were observed.

Peliosis Rheumatica.—Dr. W. T. Taylor in the *American Practitioner*, reports a case under the above name. The patient was found on examination to be suffering from the characteristic

eruption and pain of herpes zoster, extending obliquely from the spine around the body, and terminating at the left groin near the inner side of the thigh. The eruption followed the usual course of the disease. The pain, however continued with unabated, and in fact, increased severity, deep-seated, burning and continuous with no relief, except that which came with opiates, and lasted three or four weeks in spite of all efforts to effect a cure. At the end of this time the pain was transferred to the thigh and leg, following the course of the great ischiatic and posterior tibial nerves. After a few days the foot and ankle began to swell, and in a few hours were immensely puffed up, pitting on pressure. The following morning the anterior por tion of the lower half of the leg and foot were covered with dark red, livid or purple spots from the size of a shot to that of a silver dime, which remained unaltered under pressure. They retained their color for two days, then became darker, then reddish brown, and finally yellow, after which they faded out without desquamation. The pain abated somewhat during this eruption. After two weeks of improvement the pain and swelling returned, and the eruption, also, made its appearance, and ran the same course as the first, to be followed by similar recurrences, at intervals of two weeks. The eruption seemed finally to wear itself out and gradually disappeared.

The heart sounds revealed a loud systolic murmur, and the pulse was irregular. Was the morbid condition owing to small fibrinous masses detached from the valves of the heart and passing into the capillaries, causing there stagnation and coagulation; or could the conditions noted be the result of the decomposition of the fibrinous matter in the blood and consequent blood poisoning? These questions suggest themselves in endeavoring to ascertain the etiology of this affection.

Treatment of Abscesses by Hyper-distention With Carbolized Water.—Dr. Geo. W. Cullender, in the *British*

Medical Journal for November, speaks very highly of hyperdistention of the abscess sac with carbolized water as a means of cure for such abscesses, whose cavities are partitioned by septa, and are,from this reason, ineffectually cleaned by other methods. He details three cases in which he employed this means with the effect of reducing the abscesses to simple non-suppurating sinuses. One of the cases was of an angular curvature of the spine, another of disease of the vertebræ and the third of renal calculus. The patient having been anæsthetized, where no sinus exists an opening is made, with a scalpel, of sufficient size to admit a finger. The pus is allowed to escape and the abscess emptied as completely as possible. An ordinary two or four ounce syringe is then filled with a lotion of carbolic acid, one part of acid to thirty of water, and the nozzle inserted into the opening. The skin is drawn closely around the nozzle by the operator's left hand, and the lotion forced into the abscess sac. After the distention has been effected the fluid is allowed to return. If it is accompanied by much pus the operation should be repeated. An elastic drainage tube is then inserted into the wound and secured; over the end of this and over the wound, a piece of lint, twice folded and soaked in carbolized oil, is laid. This is covered with a sheet of gutta-percha tissue, and some tenax, and these dressings are secured by some ordinary plaster. The drainage tube is gradually shortened as the abscess wall contracts, and through its canal, if there be any sign of puriform discharge, a little carbolized water may be occasionally injected.

Value of the Atomizer in Diseases of the Eye.—Dr. M. Landesbury, (*Med. Times,*) says, that the use of the Atomizer is very injurious in all inflammatory conditions of the mucous membrane of the eye, with or without complication of the cornea. Its success in trachomatous pannus is inferior to that hitherto gained by other treatment. In the developement of

genuine diseases of the cornea, the application of the Atomizer is harmful; but as soon as the inflammatory appearances have subsided, we have in the Atomizer a valuable means to bring the disease to a rapid end and to facilitate the absorption of the opacities of the cornea.

In all recent opacities of the cornea, especially after burns and sloughing there is no other means so well calculated to restore the transparency of the cornea as the use of the Atomizer. Diffuse keratitis is best treated by the Atomizer. The period of treatment was reduced one-half in the cases observed. The substances used were sulphate of copper, with and without laudanum; simple laudanum; ext. opii; cuprum aluminatum; sodii chloratum; sodii carbonas. The best results were obtained with extract of opium. The length of each application varied from three to six minutes for each eye according to the irritation.

Astigmatism.—Its Rapid Diagnosis.—M. Bravais, of Lyons, France, has adopted a simple ophthalmoscopic device to effect a rapid diagnosis of astigmatism. While examining the inverted image, if at the moment the optic papilla is seen at the centre of the glass, lateral movements are given to the objective lens, the ophthalmoscopic image moves also, but varying in degree according to the refraction. If the eye be myopic, the movement is less extensive, if hypermetropic, more extensive than that of the lens, and if emmetropic the papilla continues visible at the centre of the lens, the displacement of the image and glass being equal, so that by moving the objective lens in different directions, it may be quickly determined which of the meridians is emmetropic, hypermetropic or myopic.

Obstetrics.

Cæsarean Section.—Dr. Edmunds (*British Medical Journal*, Dec. 2d, 1876), reports a second case of successful section, in which he closely followed the operative procedures employed

in his first operation. Care to prevent all septic infection was diligently made use of, and oleum terebinthinæ applied as an hæmostatic as well as careful manipulation of the uterus before the final closure of the abdomen. No sutures were placed in the uterus. Dr. Edmunds argues that this operation apart from the danger of internal hæmorrhage after the conclusion of active procedures, need not be more than half as fatal as ovariotomy, as in the latter cases, there is frequent question of rupture of adhesions of extensive interference with the peritoneum and of the complications of malignant disease.

Editorial.

NOTICE TO CORRESPONDENTS, ETC.—Communications intended for publication, and books for review, should be addressed to "Editors of Detroit Medical Journal, care of E. B. Smith & Co., Detroit."

All remittances of money, all letters on the business of the JOURNAL, pertaining to subscriptions or advertisements, should be addressed exclusively to the publishers, E. B. Smith & Co., corner Fort and Griswold Streets, Detroit, Mich.

Original Articles, Reports of Medical Societies, Observations, Correspondence, News, etc., of general interest, are respectfully solicited from every source. Articles should be practical and carefully prepared.

The Editors will not be responsible for statements made over the names of contributors.

The Metric System.

The timely article of Dr. Lathrop, on this system, in our present number, will be read with interest. The propriety of substituting it for the one now in vogue, has for some time engaged the attention of the more progressive members of the profession; and we are of the opinion that a discussion of the question by the medical journals will make this attention general. The want of a uniform system of currency, weights and measures, has long been a desideratum which has been the cause of no little inconvenience among nations having intimate commercial relations. The improvements in the methods of locomotion and communication of the present century, have brought men much nearer together than formerly, and in proportion, as their relations become more intimate and inter-dependent, does the want of a common language become more pressing. The obstacles, how-

ever, to the adoption of a common tongue, are of course insuperable, although some sanguine cosmopolites profess to a faith that even these will be removed at no very distant day. But what we have to engage our attention now, is the question of the desirability and the feasibility of the adoption of common terms expressive of weights and measures. All innovation is suspicious and it becomes us to cling to the old until something decidedly better is offered as a substitute; but while the conservatism of long-established custom is commendable, the times demand something better than the moss of antiquity as a passport to esteem. "Reform" is a watchword on which politicians have no special claims to a copyright, and the question which the subject under consideration suggests is, "Is reform necessary?" There are a number of arguments in support of the affirmative of this question, and we shall endeavor to advance a few of them.

Reform is necessary in order to bring about a system of uniformity with nations with whom we are intimately related and on whom we are largely dependent for scientific discoveries. At present England and America are the only nations of any importance which have not adopted the metric system in weights and measures. Throughout the continent of Europe, including Russia, in Mexico, and in the principal South American States, this system prevails. These countries represent a population of nearly 500,000,000, while the countries which adhere to the old and more cumbrous system represent but 80,000,000. Numbers, therefore, are in favor of a change. According to the *N. Y. Medical Record*, which has just completed a series of articles advocating the adoption of the metric system, "the New York Medical Journal Association, which endeavors to cater to the literary wants of the greatest number of its members, subscribes to seventy-seven periodicals, of which twenty-two are American, fourteen English, seventeen French, twenty German and two Italian; that is, there are forty-one journals in

which all quantities are expressed metrically, against thirty-six in which the old system is employed."

Another argument in favor of a change of some kind is the fact that even in the only two nations in which the same terms are employed, these terms do not in every case express the same quantity. The fluid ounce, for instance, represents in England 437½ grains of water and constitutes the twentieth of a pint; in this country it weighs 455⅝ grains and is the sixteenth of a pint. It is not difficult to perceive how a discrepancy of this nature tends to mislead.

A uniform system is desirable also from the fact that the druggists of this country represent a variety of nationalities in their education and, consequently, a variety of conceptions as to the quantities designated in prescriptions by similar terms. In Germany, even before the introduction into that country of the metric system, they knew nothing of fluid measure in dispensing, all quantities being designated by weight. When a German physician therefore in this country sends his prescription to a druggist educated in this country, he runs the risk of having a fluid ounce put up when he intends a Troy ounce; and what is the difference? A Troy ounce contains 480 grains, while a fluid ounce, in this country, contains but 455⅝ grains—a difference of 24⅜ grains. Can we wonder then why it is that our German physicians manifest such a decided preference for druggists educated in the same school with themselves? Something more than "vaterland" explains the preference.

The distinctions between avoirdupois, troy and apothecaries weights are also confusing, and so much so, as to cause some of our druggists to evince a refreshing impartiality in their use of the scales on their counters, and those behind their dispensing case. The comparative innocuousness of the drug in many cases, rather than the skill and carefulness of the apothecary is the patient's safeguard.

The objections which are urged against a change to the metric system, are more numerous than they are valid. It is urged that the change would disarrange our preconceived ideas of the sizes of doses. Any inconvenience from this source would, however, be but temporary. Our dose lists are very arbitrary and far from perfect, and the change they would undergo by an easy rule, which is recommended for changing the present denominations of weights into the metrical, would be practically unimportant. This rule, as given in a recent number of *New Remedies*, is "to choose the nearest round number ending in o or 5, excepting in case of very potent remedies. It is not necessary to pedantically translate one system into the other. Indeed, by remembering the following simple rules, the translation becomes exceedingly easy:

First. In prescribing the equivalent of *drachms or ounces*, multiply the number of drachms by 4, and round off the product.

Reckoning a drachm equal to 15 grains, (which is, in practice, correct enough,) we would therefore write instead of ℥ ʒ: 2.0 gm.; for ɪ ʒ: 4.0; for ɪ℥ ʒ: 6.0; ꝛ ʒ: 8.0; for ℥ ℥: 15.0 (rounded off); for ɪ ℥: 30.0 (instead of 31.1).

Second. In presenting the equivalent of *grains*, *multiply the latter by* 6, and round off the product, which is the corresponding quantity in *centigrammes*.

3 grains: $3\times6=18$, rounded off 20 ctgm, or 0.20 gm.

4 grains: $4\times6=24$, rounded off 25 ctgm, or 0.25 gm.

10 grains: $10\times6=60$, (instead of 66), or 0.60 gm.

"A change would necessitate our druggists becoming familiar with the new system; and while learning it, errors would be liable to occur," is an objection seriously raised. This objection is similar to that which was urged against the locomotive steam engine: that it would be apt to kill cattle which might get on the track. Our druggists are presumed to be men of ordinary intelligence at least, and should there possibly be any who could

not take in the change, they must, in conformity to the law of "the survival of the fittest," take a back seat. Let physicians, who contemplate adopting the new plan, give their apothecaries notice of the change, and the instinct of self-preservation will stimulate them to become posted.

"The change would necessitate the purchase of a new set of weights by the druggist." Very true; and this would not be an unmixed evil, when we recall the fact, for fact it is, that the weights employed by three-fourths (we might say nine-tenths) of our druggists, are incorrect; in many instances they do not even approximate what the marks stamped on them represent them to be. Our laws require that the dispensers of hay, groceries, beef and other commodities, shall use correct weights, but the dispenser of prescriptions is never questioned as to the correctness of his weights. Reform in this matter is very necessary, and the chances of securing it would be much greater by adopting the new system than by attempting to remodel the old. The manufacture and sale of metrical weights, are as yet in the hands of firms who have reputations at stake; and in purchasing, druggists should buy none to which the maker's name is not attached, and should be also satisfied that such name is a guarantee of honesty and accuracy.

In conclusion, the arguments in favor of the change, largely preponderate, and we hope soon to have all our correspondents make use of the new system in their communications. We are satisfied that it only requires a trial to bring it into general favor.

J. J. M.

Memoranda.

The medical society of the county of New York has recommended to its members the use of the metric system in their prescriptions.

Dr. Jos. Carson, late Professor of Pharmacy and Materia Medica in the University of Pennsylvania, is dead.

Ten doctors bid for the post of county physician in Camden Co., N. J. The bids ranged from $375.00 to $500.00 per year. The one appointed sent no bid.

Concerning the recent Arctic Expedition, Mr. Malley, of the Alert says, that among the few men who escaped scurvy and did any sledging, were four teetotallers.

A healthy person runs double the risk of phthisis in the city than in the country.—*Müller.*

Dr. W. Farr says that the mean duration of life, in London, Eng., was little more than twelve years in the seventeenth century, was about twenty years in the eighteenth century, whereas it is now about forty years.

Eighty deaths from diphtheria occurred in New York during the third week in December, '76.

The *Nashville Medical and Surgical Journal* has passed into the hands of Drs. W. K. Michol and C. S. Briggs.

The *Southern Medical Record* will be reduced both in size and price. Cause, hard times.

The *American Medical Weekly* has been changed to a semi-monthly—price, $3—twenty-eight double column pages each issue. Its general appearance suggests an imitation of the *Medical Times.*

The physicians at Saratoga report that syphilis in all its forms prevails extensively among the waiters at the large hotels The chances they possess for communicating it to the guests are said to be excellent:

The deaths at Lansing, Mich., as reported by Dr. H. B. Baker, were for November, 1876, at annual rate in 1,000, 4.10; for December, '76, at annual rate in 1,000, 7.89.

The *American Practitioner,* Dec. '76, says: "that more than thirty thousand dollars has been expended upon it during the eleven years of its existence. To our sorrow it cannot be said that advertisers and subscribers have paid all this."

Dr. A. E. Macdonald, physician of New York City Hospital for the Insane, says that during the past year there were four hundred and one admissions. Of these two hundred and eighty were intemperate, ninety were moderate drinkers, and only seventeen were abstinent. This record combined with those of former years shows that intemperance, more than all other active causes put together, is responsible for the mental aberration of the patients in this special asylum.

Dr. Gray, of the New York State Asylum, at Utica, N. Y. says that the system of forced ventilation in use since 1854 at that institution, has been such as to supply each person with an average of 152 cubic feet of fresh air each minute, night and day, during the entire year. During December, January, February and March, the supply is 120 cubic feet to each person. In April, May, October and November, it is 137 cubic feet to each person. In June, July, August and September, it is 200 cubic feet to each person. The amount of coal used in thus forcing the air in the rooms was ¾ths of a cent a day for each person.

The quarterly *Journal of Inebriety*, published under the auspices of the American Association for the cure of Inebriates, vol. 1, No. 1, pages 64; edited by the secretary of the association, Dr. T. D. Crothers, Binghampton. The present number contains the anniversary address by Dr. T. L. Mason, a paper on the cause of the increase of inebriety in America, by Dr. Geo. M. Beard; the proceedings of the association, and an editorial department. The editing is carefully performed. The price, $3.00 for 256 pages, seems rather high.

We have received the first number of the *Toledo Medical and Surgical Journal*, edited and published by Dr. J. Priest, pages 32, price $1.50. In spite of the instruction periodically given by the *Medical Record* and various other journals, Dr. Priest thinks that another journal is needed. We hope he is not

mistaken and that the profession will support him especially with liberal subscriptions. We hazard nothing in the suggestion that Dr. Priest's thoughts on medical journalism will be more valuable after he has acted as editor and proprietor of a medical journal for a few years.

Book Notices.

Any book noticed herein may be had of E. B. Smith & Co., Publishers and Booksellers, Detroit, Mich.

A Treatise on Hernia, with a New Process for its Radical Cure, and Contributions to Operative Surgery and New Surgical Instruments. By Greensville Dowell, M.D. Cloth; pages, 205. 1876. D. G. Brinton, 115 South Seventh Street, Philadelphia, Pa.

Briefly the author gives a general discussion of hernia, and the various methods for its radical cure. Then his own new method is fully described as follows: "The instruments employed are a double spear pointed semi-circular needle with an eye in each point, silver wire, a piece of cork or soft wood and a roll of adhesive plaster. The parts are well shaved, and three lines drawn, with a small brush and tincture of iodine, parallel to the direction of the hernial orifices, central line immediately over the internal orifice, and passing down to the external orifice if the hernia be oblique-inguinal; in other varieties immediately over the greatest enlargement of the tumor. The needle is then taken hold of by the left hand at its unthreaded end, then the right hand, with the thumb and forefinger, pulls up the skin and superficial fascia as high as it can be done, to the right of the middle llne, letting the middle line be just below the point of the thumb. The threaded end is then pushed through the fold held below the point of the thumb and index finger. The fold is then let loose, and the threaded end is taken by its point with the thumb and fingers of the right hand. It is then pulled on

until the unthreaded end comes just under the outside line of the right side of operator and left side of patient. The index finger of the left hand is made to invaginate the integuments as far as possible, and the finger pushed to the right under the left tendon of the patient. The right hand then raises the needle so as to have it point directly over the point of the finger and a little to the outside of it. The needle is then pushed directly down through the tendon into the peritoneal cavity; at this stage the point of the index finger of the left hand is raised to the right side of the patient, and held under the tendon; the needle is then moved about to see if it be loose and turned in its curve, so as to carry the curved portion of its point under the invaginated integuments, etc., to about one-quarter of an inch of the right tendon; the end is then brought on the outside line of the patient's right side. The index finger of the left hand is then taken out and the threaded end let go, and the unthreaded end is then held by the thumb and index finger of the right hand. It is now gently pulled on until the threaded end comes above the tendon. The point threaded is then reversed, and keeping well down on the tendon, is finally pushed out at the first puncture and pulled entirely out, leaving the two ends of the ligature close together in the same puncture. In this way a ligature is placed around two sides of the rupture, with enough tendon and muscle to give the thread sufficient surface to act on. Now by pulling the two ends of the thread the rupture is closed internally, and its natural support replaced. The ends are now tied around a roll of adhesive plaster, a piece of cork or wood." Of ninety-six operations made according to this method, eighty were perfect, and the rest failures.

The author gives a series of rules, the observance of which will ensure a cure in all cases. This operation constitutes the backbone of the book, the substance of the remaining portions being, in the main, filling.

However valuable the operation described may prove, the quotations already made show tnat the book is a failure if judged from a literary stand-point. Even the elaborate and often instructive plates do not redeem it. Still the author is a practical surgeon, and to a practical surgeon his book will be both suggestive and instructive. L. C.

FOURTH ANNUAL REPORT OF THE BOARD OF HEALTH OF THE CITY OF BOSTON. 1876. Paper; pages, 90. Boston, Mass.

In addition to the routine official documents of such reports, there is an interesting report on "Infant Mortality," by W. L. Richardson, M.D., Boston. The death rate of Boston for the year ending April 30, 1876, was 28.08 per thousand. This high death rate, as compared with that of other cities, is thought to be due to (1) the wretched sewerage, and (2) the more perfect registration of the deaths. One thousand three hundred and sixty-one died of consumption. The largest number died in April, next in October, next in January. The death rate of infants was 94.84 per thousand; among those over five years old, 16.73 per thousand. Of 4,167 deaths of children under five years of age, 687 were due to "cholera infantum," 467 to scarlet fever, 405 to diphtheria, 342 to marasmus, 230 to pneumonia, 212 to meningitis, 204 to croup. The death rate of infants of one month and under was 792.20 per thousand. This enormous death rate diminished to 30.22 per thousand among those between four and five years old. The greatest number of deaths was among those of foreign parentage. The death rate in some parts of Boston was as low as 37.13 per thousand, while in other parts it was 96.14 per thousand. More than half of the infant mortality was due to preventable causes, induced by ignorance, poverty and immorality. To reduce the death rate of infants, the following measures are proposed: (1.) Greater attention to the general sanitary condition of the city. (2.) The establishment of public parks and squares in and about the city.

(3.) A systematic and frequent inspection of the homes of the poor. (4.) The dissemination of rules which should govern the bringing up of children. (6.) The establishment of diet kitchens; of county houses; of infant day-asylums; of foundling hospitals, and the isolation of contagious diseases. L. C.

A Lecture on Specialism in Medicine. By Dr. G. D. Ford. Reprinted from the Amer Practitioner. Nov. 1876.

The positions taken in this address are these:

(1.) "Specialties pursued by men of general and proficient cultivation in the science of medicine, who have had clinical experience sufficiently enlarged to give them acquaintanceship with the current morbid processes of the body, and enable them to distinguish between them and to trace them to their probable pathological sources must rarely fail to be productive of good both to the profession and public, and materially advance the interests of science.

(2.) A person, notwithstanding he may be of gigantic intellect and untiring industry, unless he becomes a general medical scholar and a patient, careful student of diseases generally cannot become a successful and useful specialist, but will retard progress and injure the science by his frequent blunders and so be the instrument ot mischief to the public."

American Clinical Lectures.—Edited by Dr. E. C. Sequin.—Spinal Irritation—Its pathology and treatment, by Dr. Wm. A. Hammond.

In this lecture, Dr. Hammond still maintains the existence of a special disease under the above name - all the world to the contrary notwithstanding. He believes that this disease not only exists, but that its pathology is due to anæmia of the posterior columns of the spinal cord. His reasons for this belief, he gives under eight different heads. Each reader will judge for himself whether he has thus proved his point. For ourselves, we think all of his reasons would apply equally well to several other

hypotheses. That in so called cases of spinal irritation there is malnutrition of the posterior columns of the spinal cord, we are prepared to admit; but that this malnutrition depends upon anæmia, we see no grounds for believing. For their healthy activity, the posterior columns need good blood in sufficient amount, a proper activity of the lymph canals and of the nerve cells and fibres, all arguments drawn from physiology or demonstrated pathology or treatment. That nerve cells and fibres or lymphatic vessels may be directly deranged without reference to the state of the blood vessels, there is abundant proof. The theory of Dr. Hammond is pernicious in that it overlooks these facts. Pathologists must learn that each tissue of the body may be directly injured or destroyed as well as indirectly through the blood supply. Accumulating facts tend to show that very many cases of so-called disease of the spinal cord are secondary to some derangement in other organs whose nervous supply is direct from this part of the cord. In treatment, he calls attention to the fact that the cause of the disease should be ascertained and removed; of these causes he mentions over-work, or defective nutrition, or improper hygiene of some kind, certain emotions. Surely these are as capable of affecting the nerve cells, fibres, etc., directly as through the blood vessels; or if not always directly, at least through their connections with certain organs that first suffer from the particular cause. In any case the cause must be removed. As to medical treatment, he gives medicinally strychnia, quinine, iron and phosphoric acid. Blisters to the spine or actual cautery, nutritious food, pure air, and cheerful surroundings, are to be carefully looked after.

L. C.

Fracture of the Patella and Treatment by a New Method.—By Dr. H. O. Marcy. Reprinted from Boston Med. Jour., Dec. 7, 1876.

The features of this method are briefly; 1. The removal of the effusion into the joint if necessary, by the aspirator. 2. After

the traumatic inflamation has subsided, he uses the following: Maw's adhesive plaster is cut in pieces of concentric shape, of considerable width, and carefully adjusted above and below the patella; the inner edges are welted over a small cord and the projecting points doubled back. These pieces are perforated for the introduction of an elastic cord. 3. The limb is carefully enveloped in a plaster bandage, extending from the toes to the hip and strengthened by inlaid pieces of tin. Rest and support are maintained as in fracture of the thigh. Tins are incorporated into the bandage on each side of the knee, of suitable shape to reinforce the fenestrum, which is cut in the bandage of oval shape and sufficiently large to liberate the entire patella with a free surrounding of nearly an inch. Loops of wire are also adjusted in the bandage, at suitable distances for the tying of the elastic ligatures fixed in the extremities of the adhesive plaster. Pressure is made upon the patella by the adjustment of the cords. The patient may, at once walk or ride, etc. Three successful cases are reported as evidencing the good results of the treatment.

On the Treatment of Eczema.—By Dr. R. W. Taylor.

This is an exceedingly excellent lecture on a very important subject, giving the best and latest views on the matter.

American Clinical lectures. Vol. II; No. VII. On Tracheotomy and Laryngotomy. By H. B. Sands, M. D. G. P. Putnam's Sons. Edited by E. C. Sequin, M. D.

An excellent account of the above topics by one of the best of surgeons. It will increase the already enviable reputation of these lectures.

Vol. II; No. VIII. The Hypertrophied Prostate. By Robert F. Weir, M. D.

In the city of New York, during 1875, fifteen hundred and four men past sixty died. One hundred and seventy-three died from urinary difficulties, of which forty-one and probably more

were from prostatic diseases. Yet if properly treated, Sir. H. Thompson says that those affected with senile hypertrophy of the prostate live equally long with those not thus affected. To detail the natural history of such hypertrophy and to obviate its evil results are the subjects of this lecture.

SALICYLIC ACID. The Experience of Maine Physicians in its use. Reported by Dr. F. H. Gerrish. Reprinted from the Transactions of the Maine Medical Association. 1876.

The evidence here presented shows that salicylic acid is extensively and satisfactorily used in acute rheumatism and rheumatoid affections. As an antipyretic it was found efficient. Lastly it was found to be useful as a deodorant.

WESTERN NORTH CAROLINA AS A HEALTH RESORT. By W. Gleitsmann, M. D., Physician in charge of Mountain Sanitarium for Pulmonary diseases Ashville, N. C. Read before American Public Health Association. Nov. 1875.

An excellent description of climatic peculiarities of Western North Carolina. Those interested in the study of climates as related to the treatment of phthisis will do well to read this little essay.

THE TREATMENT OF ANTIFLEXIONS OF THE UTERUS. By Eli Van de Warker, M. D. Reprinted from N. Y. Medical Journal. June, 1876.

Dr. Van de Warker emphatically commends the use of intra-uterine pessaries in the treatment of anteflexions of the uterus. Each pessary must be made specially for each case as the anatomical features of each differ widely.

INTRA-PELVIC PHLEGMONOUS TUMOR — INVOLVING RECTUM, UTERUS AND SACRAL PLEXUS. By Dr. Edward J. Bermingham.

The pelvic cellulitis in this case was so entensive as to occlude the rectum. The bowels were evacuated by passing an enema tube through the compressed rectum and washing out the accumulations. A good recovery took place.

A Clinical Lecture on the Treatment of Incipient Stricture by Otis Operation. By Mr. Berkeley Hill, Prof. Clinical Surgery in University College. Reprinted from the London Lancet of April, 1876, with explanatory remarks by Dr. F. W. Otis, M. D.. Reprinted from London Lancet for June, 1876.

Sulphate of Cinchonidia. A Paper read before the Kentucky State Medical Society by J. W. Compton, M. D.

The following advantages over quinine are claimed for the above salt. Fewer relapses following its administration—the patient tolerates it better—there is less ringing and noise in the ears; less liability to deafness; less nervous excitability or chance to produce diarrhœa, and lastly, its cost is one third that of quinine.

The History of Spontaneous Generation. A paper read before the Ann Arbor Scientific Association, by Dr. E. S. Dunster, Professor of Obstetrics, etc., in the University of Michigan. Reprinted from the first volume of the Transactions.

This is a very thorough and able paper on the subject—one worthy of the attention of those who have not time or opportunity to look up authorities.

Clinical Lecture on the Use of the Plastic Dressing in Fractures of the Lower Extremity. By Dr. D. W. Yandell, Prof. Surgery Univ. Louisville. Reprint from Amer. Practitioner, July, 1876.

In this lecture it is advised to dress fractures of the lower extremity immediately after the injury and to use the plastic dressing. Thus put up the limb will not swell.

Micro Photographs in Histology, Normal and Pathological. By Carl Seiler, M. D., in conjunction with J. G. Hunt, M. D. and J. G. Richardson, M. D. Aug. 1876. Published monthly. Philadelphia, J. H. Coates & Co.

This contains the injected kidney of a mouse, showing the relations of the cortical to the medullary substance of the malpighian tufts to their arteries, and of both to the uriniferous

tubules are plainly shown. The second plate illustrates chronic nephritis; the third, the malpighian tufts, and the fourth, crystals of urea. With the explanatory text these are very instructive.

THE TREATMENT OF FEVER BY COLD. By H. A. Dubois, M. D. Reprinted from Transactions of the Medical Society of the State of California, 1876.

The main object of this book is to direct attention to the efficacy of running water in lowering the temperature. Blankets are made by coiling rubber tube in the proper shape and fixing it by sewing it between two sheets. Water is introduced at one end of the tube and escapes by the other into an appropriate vessel. In this way the heat is reduced to the desired standard. On the same principle a bed is devised, head caps, etc.

THE COLLATERAL CIRCULATION IN ANEURISM. Report of the Successful Ligation of the Innominate, the common Carotid, the Vertebral and Internal Mammary Arteries in a Case of Right Subclavian Aneurism. By A. W. Smyth, M. D. Paper, page 25.

The case which forms the basis of this paper is, in some of its features, unique. In the first operation only the innominate and carotid arteries were tied. Hæmorrhage from the sac through its distal end induced the effort to control it by introducing shot in the wound. After a time this failed, and as last resort the vertebral artery was tied, when the bleeding stopped. Some years afterwards, the aneurism returning, Dr. Smyth tied the internal mammary artery, and thus again successfully the aneurism was cured. A year afterward he died of an abscess near the shoulder.

THE USE AND VALUE OF ARSENIC IN THE TREATMENT OF SKIN DISEASES. By L. Duncan Bulkley, M. D. 1876. Pages, 75. N. Y.: D. Appleton & Co. Extracted from Report of Amer. Med. Association.

The results reached by the author we have given elsewhere.

THE POPULAR HEALTH ALMANAC FOR 1877.—Edited by Dr F. Hoffman, and published by E. Steiger, of New York.

This is an admirable publication, worthy of the heartiest support by physicians, pharmacists and people. Its object is to take the place of almanacs which are devoted to the advertising of patent medicines, etc.

The present number contains a varied and compact series of articles of genuine value to the average household. In addition to the tables for the twelve months, the sidereal and chronological features of the year, postal matters, the universal metric system, reduction of metric weights into avoirdupois weight and inversely, reduction of litres into quarts, and inversely we find the following:

Applied health knowledge, first help in accidents and emergencies, nostrums and their compositions, statistical tables, etc. All these articles are prepared with great care, for the special instruction of the masses in the avoidance of sources of disease and death. We trust that the enterprise may be heartily sustained by all interested parties. L. C.

THE MEDICAL LIBRARIES OF BOSTON.—By James R. Chadwick, M. D.

This is a report to the Boston Medical Library Association, of which Dr. Chadwick is librarian. He begins with a history of the Boston Medical Library, established in 1805, and continues with its successors until the founding of the last in 1875. Then a brief account of the results of one year's work in establishing a library are recorded. Four thousand four hundred and eighty-eight volumes were thus accumulated, of which nearly three thousand are Medical Journals. A reading room is stocked with one hundred and twenty-three medical periodicals. All this has been done and the Society is free from debt.

PELVIC-PERITONITIS. A Clinical study. By Curtis Smith, M. D. Reprinted from Amer. Jour. Obstet. Aug., 1876.

Remarks on Intra-Uterine Polypi with Reference to their Diagnosis and Surgical Treatment. By A. Reeves Jackson, M. D. Reprinted from Chicago Med. Jour. and Examiner.

The Ovulation Theory of Menstruation—Will it Stand? By A. Reeves Jackson, M. D. Reprinted from Amer. Jour. Obstet. Oct., 2876.

The essential teachings of this article we have given elsewhere.

On Masturbation and Hysteria in Young Children. By A. Jacobi, M. D. Reprinted from Amer. Jour. Obstet., Feb. and June, 1876.

A very suggestive essay on very important groups of cases.

Meteorological Report for December 1876.

BY C. HENRI LEONARD, M. D., OBSERVER FOR STATE BOARD OF HEALTH.

Barometer.—Highest, 30.517; lowest, 29.390; range, 1.127; average, 30, 015.

Temperature.—Highest, 42; lowest, —9; average, 18.5; range, 51. This has been the coldest December we have had since 1870; the mean temperature for 1871 being 25; for 1872, 20; for 1873, 46.4; for 1874, 29.7; for 1875, 33.4. The lowest temperature this month was lower, by from 6 to 25 degrees, than that recorded in the years above given, save in 1872, when the mercury sank to —14.

Winds.—Prevailing direction s. w.; greatest velocity, 35 miles per hour; total number of miles traveled 5,821. At eight observations there were "calms," viz; at 9 p. m. of the 10th; 7 a. m. of the 11th; 9 p. m. of the 19th; 7 a. m. and 9 p. m. of the 21st; 7 a. m. of the 22d; 9 p. m. of the 27th. and 7 a. m. of the 28th.

Clouds.—Number of clear days, 1; cloudy, 18. Snow fell on 21 days. More snowy days this month than for any previous December since 1870, by from 2 to 10 days.

Rainfall.—Greatest daily amount, .47 of an inch; this

was on the 17th. Total amount of precipitation, 1.96 inches. In 1871 there was 1.88 inches; in 1872, 0.69 of an inch; in 1873, 4.69 inches; in 1874, 0.60 of an inch; in 1875, 3.20 inches.

MOISTURE.—This was at a minimum; the highest absolute humidity being but 2.35 grains per cubic foot of air. On three entire days, 9th, 16th and 17th, there were was so small an amount present (less than ½ grain) that we have exact tables for computing it. Of five observations, other than on the days mentioned, the amount was not computable.

OZONE.—Maximum coloration, 2. This was on the 19th, 20th, 29th and 30th. "Traces" were only observed at many observations. Coloration to 1 of the scale was observed at nine observations.

Frost occurred on the 5th inst. A lunar halo was observed on the 18th. "Storms" occurred on the 8th, 14th, 15th and 29th.

The following summary for the year has been furnished us by Serjeant Van Husen, of the U. S. Signal Service:

WEATHER FOR THE YEAR 1876.

	Mean Barometer.	Mean Temperature.	Highest Temperature.	Lowest Temperature.	Total Rainfall.	Prevailing Wind.	Number of miles traveled.	Maximum velocity of Wind.	Days on which Rain or Snow fell.
January	30.036	32.4	65	9	2.00	W.	7,150	36	19
February	30.036	28.6	54	4	5.59	W.	5,986	36	17
March	29.979	29.8	62	7	5.50	N. W.	6,646	32	20
April	29.964	44.0	69	25	1.80	W.	5,690	45	13
May	29.975	57.5	85	30	5.62	E.	4,896	20	20
June	29.863	69.3	88	50	1.51	S. W.	4,643	30	17
July	29.945	73.0	90	53	5.94	S. W.	4,293	36	12
August	30.002	72.1	87	46	2.46	S. W.	3,346	15	15
September	29.952	59.1	77	39	2.81	E.	4,487	24	20
October	29.917	46.2	72	24	2.89	S. W.	5,583	30	20
November	29.935	38.6	68	16	2.32	W.	4,233	36	21
December	30.015	18.5	42	9*	1.96	S. W.	5,821	35	21

* Below Zero.

STATISTICS FOR 1876.

No. of Auroras, 2; Storms, 23; Lunar halos, 10; Solar halos, 7; Frosts, 18; Meteors, 1; Fogs, 19; Parheliæ, 2; Coronæ, 2.

WORLD'S FAIR, 1875.

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[*Extract from a letter.*]

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Yours truly,

A. H. KOLLMYER, M.A., M.D., C.M.,

Professor Mat. Med. University of Bishops College,

Lecturer on Chemistry, Botany and Mat. Med. in the Quebec College of Pharmacy, etc., etc."

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"' *Detroit, Mich.* *Analytical Chemist.*'"

***** Sugar-Coated Pills are more soluble than Gelatine Coated or Compressed Pills.—*Prof. Remington's Paper read before American Pharmaceutical Association, Boston*, 1875.

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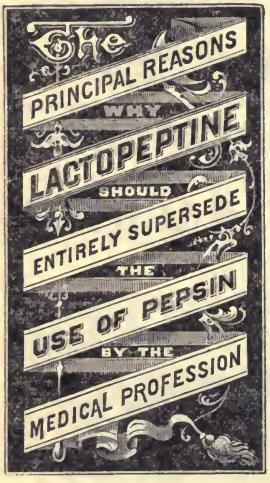

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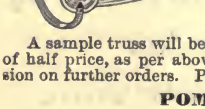

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LEARTUS CONNOR, M. D., Secretary,
Professor of Physiology and Clinical Medicine.

RECITATION SESSION.

H. O. WALKER, M. D.,
Lecturer on Genito-Urinary System and Rectum.

DANIEL LAFERTE, M. D.,
(Demonstrator of Anatomy) and Lecturer on Orthopœdic Surgery and Tumors.

J. G JOHNSON, M. D.,
Lecturer on Diseases of Mind and Nervous System.

DAVID INGLIS, M. D.,
Lecturer on Histology, Curator of Museum and Librarian.

J. H. CARSTENS, M. D.,
Lecturer on Differential Diagnosis.

E. L. SHURLY, M. D.,
Lecturer on Diseases of Throat and Lungs.

F. A. SPALDING, M. D.,
Lecturer on Diseases of Skin.

C. C. YEMANS, M. D.,
Lecturer on Chemistry.

The Collegiate Year is divided into three sessions.

PRELIMINARY SESSION opens Wednesday, September 6th, 1875, and continues one month. The Clinics are held and the Lectures delivered by the Professors of the regular Faculty, and in the same order and frequency as during the Winter Term. Opportunity is given to dissect or work in the Chemical Laboratory.

The REGULAR SESSION opens Wednesday, October 4th, 1875, and continues five months. During this term all the branches of *General Medicine* and *Surgery*, both scientific and practical, are taught with care and thoroughness. All students are daily examined on the subjects of the lectures and on their dissecting and laboratory work.

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The recitations will embrace the general subjects of the Regular Session, viz., Anatomy, Surgery, Midwifery, Diseases of Women, Physiology, Practice of Medicine, Materia Medica and Chemistry.

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For the Recitation Term the Lecture fees are $10, to those who attend the other courses. All others are required to matriculate and take out the Hospital tickets.

All fees payable in advance to the *Secretary*.

Board and Rooms can be obtained at low rates—according to accommoda[illegible] n $3 to $5 per week. Announcement and Catalogue, or any further information which may desired, can be promptly obtained by addressing

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